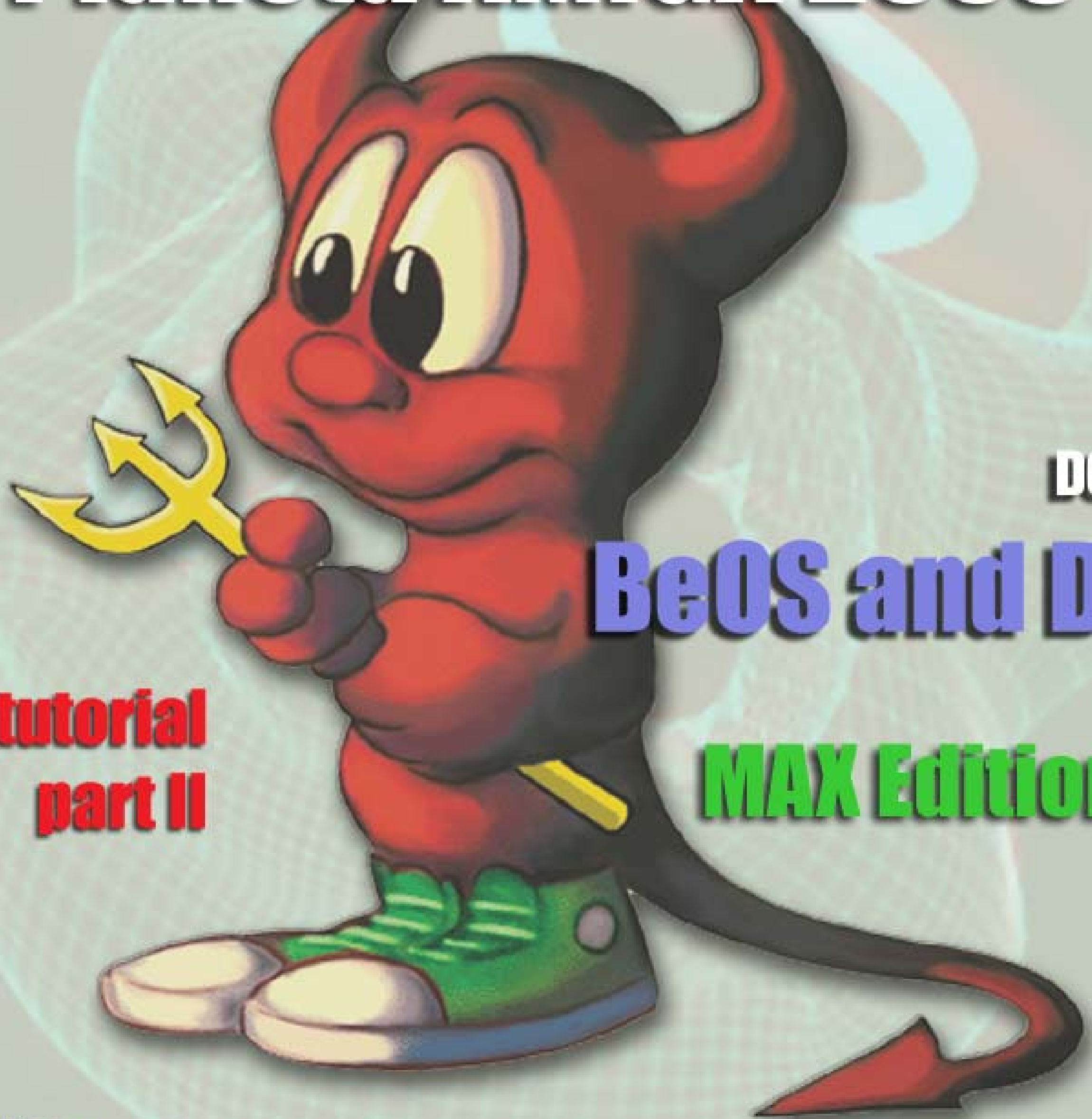
MAGAZINE
BEYOND

beos - amiga - osx - linux - *bsd

FREE MAGAZINE - N.2 OCTOBER 2003

Pianeta AMIGA 2003

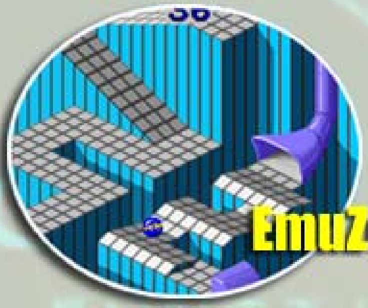


DOSSIER

BeOS and DivX

REBOL tutorial part II

MAX Edition v3



EmuZone

BSD Special

NEWS - BECOME - INTERVIEWS - REVIEWS - DEVELOPMENT - EMUZONE

Thank you!

Thank you so much! You have been great! The first issue of Beyond went great, we received compliments and translation requests from all around the world. It is clear that the efforts of this so united team yield fruit. The result is this second issue with many more pages, interesting services and we hope less mistakes (due to our youth).
In this marvellous issue number two you could read an exclusive interview with Scot Hacker, ex-guru of the BeOS community, who now attends to MacOSX with the same energy and competence. With regard to OSX, we talk about Darwin in two articles.
We are proud to introduce you two of the most numerous families of the operating systems scene. Pier Luigi Fiorini, beside of an interesting article about Linux distributions, guides us through the world of OSBOS that is Open Standard BeOS-compatible Operating Systems, while Matteo Riondato, member of the GUFI (Italian FreeBSD User Group) will introduce us to the family of BSD systems: Free, Open and NetBSD and Darwin.
Too many articles, as we said, in order to list them all. Yet we cannot miss the dossier of this month that explains how to use BeOS to reproduce and rip DVDs with DivX codecs.
This month we count on starting a column called "Digital Cultures", a journey to search and discover how computer science influenced our culture, arts and way of life. "A World of Thousand of bits" is the title of the fascinating article by Gabriele Baldassarre of the retrocomputing magazine Reload, who started the time machine bringing us to the earliest '80s when the computer graphic revolution began with the movie "Tron".
The special reportage dedicated to Pianeta Amiga 2003 closes greatly this rich issue. Pianeta Amiga is an italian show come to the seventh edition, that gathers exhibitors, courious people and users of Amiga systems. In the last years it opened the doors even to other alternative systems, like BeOS. We could not miss this opportunity. Our brave Giuseppe Gargaro and Christian Celona represented itBUG introducing Beyond and Zeta beta 6 to the general public.
Have a nice reading!

Gian Davide Alfano
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English edition by
Andrea Scatena and Eros Viganò

BEYOND

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GRAPHIC PROJECT
Gian Davide Alfano

SUMMARY

SPECIAL

NEWS

RUBRICHE

BEYOND

by Eros Viganò *[eros@significant-others.com]*

First offers from yellowTAB!!!

YellowTAB announces three 100% Zeta compatible "Complete Zeta Solutions", for European market only. The two Desktops (based on AMD Athlon™ and Intel® microprocessors) and the Laptop (based on Intel® Centrino™) are fully guaranteed for two years. Both come pre-loaded with Zeta Deluxe Edition.

As a launching promotion and for a limited time only, you can order the "Zeta: Deluxe Edition Special Bundle", where along with Zeta Deluxe Edition RC1 (Release Candidate 1), you also receive a free Zeta t-shirt for only 99 EUROS.

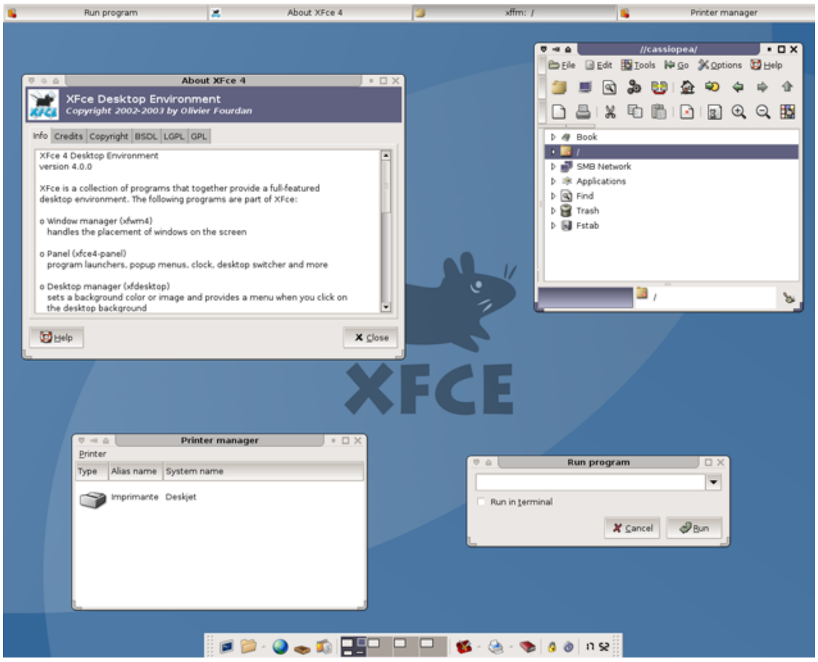
Bernd assure that the R1 will be sent for free as soon as it will be available (of course excluding the 10 EURO shipping costs).

http://www.yellowtab.com/yellowtab.com/shop/shop.php?category=hardware

Embedded Linux® and Java™ in the new "Moto" A760

Motorola has launched its first embedded Linux® /Java™ smartphone, the much-anticipated A760, in the Asian market. The unit integrates MontaVista's Linux Consumer Electronics Edition with Java™ technology and combines the ideal features of a mobile phone with the capabilities of a personal digital assistant (PDA), digital camera, video player, MP3 player, speakerphone, advanced messaging, instant Internet access and Bluetooth™ wireless technology, packed into one compact device with a vivid 65k colour touch-screen.

http://www.mvista.com/cee/index.html
http://motoinfo.motorola.com/motoinfo/products.asp?product=A760&y=2003



XFce 4 Desktop Environment
version 4.0.0

XFce is a collection of programs that together provide a full-featured desktop environment. The following programs are part of XFce:

o Window manager (xfwm4)
  handles the placement of windows on the screen

o Panel (xfce4-panel)
  program launchers, popup menus, clock, desktop switcher and more

o Desktop manager (xfdesktop)
  sets a background color or image and provides a menu when you click on the desktop background

XFCE Desktop Environment

XFce 4.0: new born baby

The XFce Project has released the XFce 4.0 Desktop Environment and Development Platform for Linux, *BSD, and other Unix-like systems. XFce 4 is a complete rewrite of the previous version. It's based on the GTK+ toolkit version 2. It's light, stable, modular, visually appealing and easy to configure. It offers a panel with detachable menus and many useful plugins, a full-featured window manager, a background manager, a taskbar, a centralized settings manager, a frontend for printing, a Gtk2 theme-engine, a file manager with Samba browsing and mount/unmount capabilities, drag and drop and fonts anti-aliasing support, and KDE3/Gnome2 native interoperability... Moreover, XFce has been translated in many languages. Source archives and binary packages are available for this final release.

http://www.xfce.org/

Hello BeOS ... in Java World!

Finally the dream comes true. After a long waiting, Simon Gauvin and the BeUnited.org Team, confirmed that BeOS now has a real Sun based source port of Java™ Hotspot Virtual Machine 1.4 running and executing Java byte code. Hello World was officially the first program to run.
The VM is using native BeOS threads and accesses the native OS functions. The Java™ BeUnited.org team is working on the AWT to Interface Kit link, and building a BeOS look and feel for Swing.

http://www.beunited.org/
http://java.sun.com/products/hotspot/

BeOS Max Edition v3.0 released

Vasper and the BeOS MAX team released one of the most famous BeOS distro based on the Personal Edition v.5.0.3. This brand new version includes in the 280MB bootable ISO, in addition to the many third party software, patches and drivers, the full support of Athlon XPs and Pentium 4s (above the preview of the BeOS Max new logo).

http://www.beosmax.org/

QNX® driving the future

Peek under the hood of any new in-car telematics system, and you're likely to find the QNX® Neutrino® RTOS. After Daewoo, Ford, Harman Becker, Hunday, Johnson Controls, and LG Electronics (all building their next-generation telematics products on QNX technology) now it's time to Audi.
Mathias Halliger (Audi AG): "Alongside the exacting hardware requirements, choosing the correct software components dictates the success of such a demanding product. For its infotainment components, Audi will therefore be using the real-time operating system QNX Neutrino by QNX Software Systems Ltd., as this permits a highly reliable software platform thanks to its modern microkernel architecture."

Two shots of the command panel of the new Audi with QNX Neutrino

http://www.qnx.com/
http://www.qnx.com/markets/mk_telematics.html

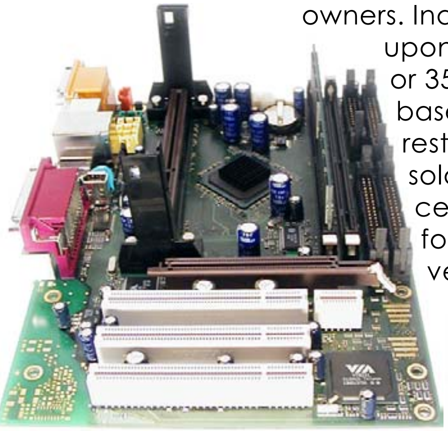
New sites for Zeta

Do you want something totally different in the BeOS and Zeta world? Take a look at these brand new sites about the latest news on the Zeta OS and other BeOS alike OS's and do not miss the opportunity to discuss this news and other topics on their forums.

```
while (is_computer_on() and ZetaNews() )
{
      Joyce_Notenboom  = 'http://www.zetanews.com/';
      Daniel_Teixeira = 'http://www.iscomputeron.com/';
}
```

Pegasos II

Genesi announced that Pegasos II the Pegasos II will go on sale within October 2003. The new hardware will come with Debian PPC and MorphOS. The first limited production of the Pegasos II will be for 600 units where 100 Pegasos II G4s will be reserved for existing Pegasos I G3 owners. Individuals will be sent the new Pegasos upon receipt of 200 Euros (there will be 10 or 35 Euro shipping and handling charge, based on the shipping method).All the rest of the Pegasos IIs to be offered will be sold through Resellers or Pegasos PPC, with prices varying from 299 to 499 Euro for the G3 and the G4 respectively.



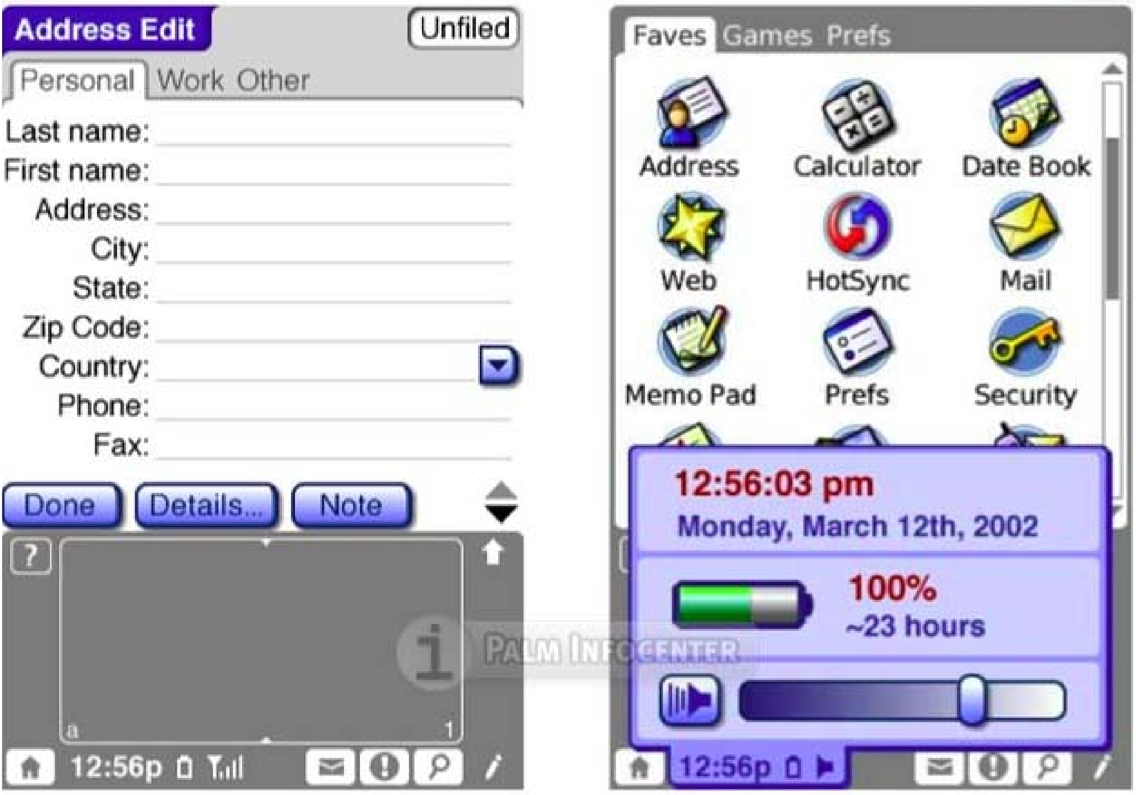
Two shots of the new Pegasos II motherboard

Behind the scenes

the first Pegasos II commercial production run will be for 5000 units

the Pegasos II will be authorized to “wear” the IBM PowerPC logo after a agreement between IBM and Genesi

Code name Sahara



A probable screenshot of PalmOS 6 published by PalmInfoCenter

The PalmOS 6 Operating System will come to light next 29 December. Palm OS 6 will focus on next generation communications and frameworks for new and upcoming technologies. Specifically, scalable communications, more robust security features, a new multimedia framework with a scalable graphics engine, interchangeable I/O features (such as the ability to incorporate many different methods of data input) and a new messaging framework.

Developers will also be able to write fully ARM native applications: OS 6 will also include Multi-processing/threading features, web services (XML/SOAP), a Java VM and the PalmSource web browser.

The image shows what might possibly be an early screen shot of Palm OS 6.

http://www.palm.com/
http://www.palminfocenter.com/view_story.asp?ID=5339
http://news.com.com/2100-1045_3-5081032.html

Darwin.
The Evolution of the Species

by Andrea Scatena *[andyscat@libero.it]*

Our discussion about MacOS continues introducing Darwin, the kernel of OSX

In the last article we saw the Os X filesystem structure, structure based upon that of Posix compliant systems. But differently from the other Unix systems, Os x is based on a "mixed" core underneath.

Every operating system is based on a core, a nucleus that sits between user's given services and the hardware.

This core is the system kernel.

There are two main schools about the construction and implementation of a kernel: that which thinks that all the services are implemented in kernel space (monolithic kernel) and that which thinks that services given to the users are implemented in user-space, instead of kernel-space, acting like servers that talk directly with the kernel (micro-kernel).

Without considering what pushes one to implement one or the other kind of the kernel, let's see what Apple has done.

We saw that in many ways the filesystem structure in Os X is just like the filesystem structure in FreeBSD, in the choice of the kernel things differ a lot: Apple has chosen (a NextSTEP heritage that Jobs bring back with him returning in Apple) to implement Os X kernel using the Mach kernel, version 3.0.

Mach is a micro-kernel developed back in the '80 by the Carnegie Mellon University, and it has been used by IBM (for the never completed port of Os/2 on the PPC processor) and By the Free Software Foundation as a base for the GNU HURD operating system, still in development as of these days.

But Apple has modified Mach kernel to suit her needs, implementing it in an hybrid way: XNU (as it is also called) is a micro-kernel implemented as a single server wrapped in a BSD subsystem derived from 4.4 BSD.

A pure Mach kernel allows to use the operative system as a separate process from the various servers that supply their services to the user, but in this way it could loose in performance for messaging with separate processes is far slower than doing it with a process that reside in the same space.

Implementing Mach as a single server allows Apple to gain in terms of performance, while retaining an higher grade of flexibility and robustness, taking the best characteristics of both kinds of kernel types.

The two components of the XNU kernel, Mach and BSD, handle different areas: Mach handles memory management, IPC (Inter-Process Communication) and the I/O kit taht is to say the device drivers; BSD handles users and relative permissions, the networking stack, an advanced virtual filesystem and mantain compatibility with Posix specifications.

The best advantages of this solution are memory protection (so if an application crashes the system is untouched, because Mach dosn't allow that the app could write in the memory area dedicated to another app or to the OS itself), preemptive multitasking (Mach controls the CPU, optimizing tasks and handling priorities among different tasks so to mantain the topmost levels of activity and efficency) and an advanced model of virtual memory (where data and code portions are cached for applications use but are not loaded in physical memory until they are effectively called: on Os X virtual memory is always on).

Upon this core, the heart of Os X, we find, layer upon layer, the other elements that make the OS: core services, application services, Quicktime, the Classic sub-system (that allows to run old apps that are not re-written to run natively under Os X), Java, Carbon, Cocoa, Quartz and aqua.

All of this to lead us to the wonderful eperience that comes using the operative system day by day, both using it to surf the web and to write letters, and using it as a development platform, or a multi-media workstation.

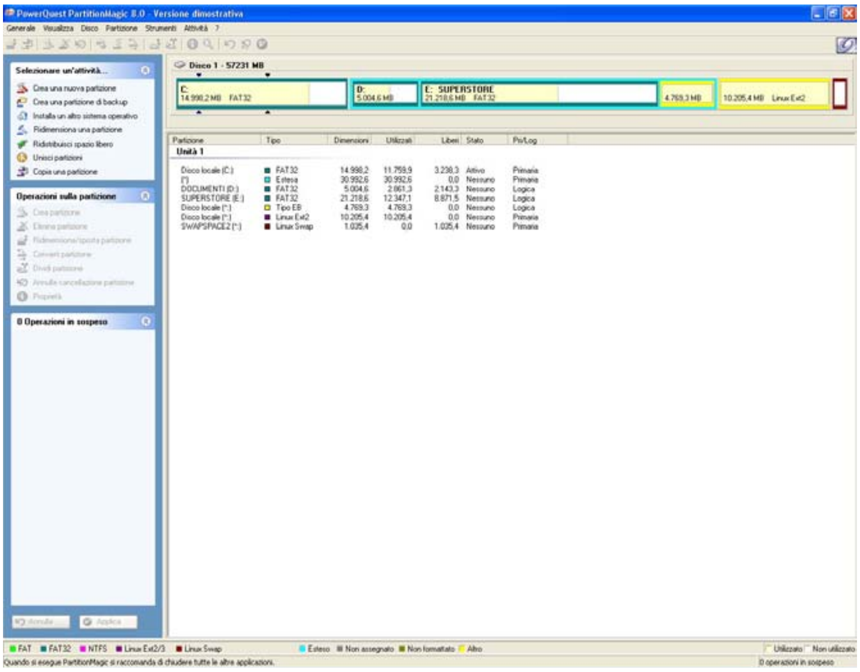
Till the next time.

Installing BeOS

by Mattia Tristo [mattia_tristo@libero.it]

This months we'll talk about the installation of BeOS: from partitioning the hard drive to the configuration of the bootloader

Let's see how to install this wonderful Operating System without run into loss of data.
The possible types of installation are basically two: the downloadable Personal Edition and the ISO Personal Edition.
Downloading the Personal Edition, we are in front of a Windows executable file: launching it, a setup process will create a 500Mbytes "hardfile" used as virtual partition in which will be copied all the system files and applications. To start the BeOS it will be enough to double click the BeOS icon created during the previous installation process. This version, although the easiest, it's certainly the one that will give less satisfaction as the File System is emulated under Windows with the consequent loss of performances.
The second installation, the one from the BeOS CD-Rom (in all the possible flavors e.g. Max Edition, Developer Edition, etc.), even if the most complicated, it's for sure the best one form the performance and personal satisfaction point of views. The most delicate phase is the starting one, in which a new partition (specific space on the Hard Disk) must be created to install BeOS. Before starting up we need to be sure if, on the Hard Disk, all the available space has already been used for other OSes' partitions.
To do that, we can use the Windows administrative tools or the fdisk partitioning utility (for DOS as like as for Linux). If the Hard Disk had been fully used we must recourse to a specific partition-resizing application (commercial like Partition Magic (**PHOTO 1**), or open source like Fips).
Before proceeding it's a good rule backing up all the important documents stored on our Hard Disk and reading in depth the instructions of the chosen partitioning software (ATTENTION: during the resizing phase a single error should be fatal to all the data present on the Hard Disk). We will proceed assuming the resizing operation is needed and the Hard Disk is fully occupied with a Windows installation. As resizing tool we can use the open source Fips or the commercial Partition Magic, recommended (this one) for the most inexperienced users because it's much more safe and easy to use.
Once the essential data backup is finished, we can connect to the Internet to download Fips (**http://www.igd.fhg.de/~aschaefe/fips/**) and begin the instructions close reading, or we can install the Partition Magic and leave the software to guide us.
Before proceeding, whatever is the chosen tool, it's better to do a disk integrity test and then (always in Windows) launch the defrag tool to optimize the files. In this way the partitioning software will work with no particular problems during his work.
In this article we leave out the full description of the partition resizing steps with Fips, letting you look for much more exhaustive readings about that in the Internet. Let's suppose then to have sufficient not-partitioned and not-formatted space on the Hard Disk.
Good, we are at the 70% of the installation process, which does mean we have overtaken the most difficult phase in the user point of view. Proceeding then to the real OS installation, returning in the Be engineers' hands, you'll see that it's a cinch!
We can start the installation. Insert in the CD-Rom drive the BeOS CD and reboot the System. The computer should boot from the CD (otherwise you have to modify the BIOS boot options) and soon a blue screen with BeOS 5.0 payoff will appear and seven installation' step icons will light-up in quick succession.


PowerQuest PartitionMagic 8.0 - Versione dimostrativa
Generale Visualizza Disco Partizione Strumenti Attività ?
Selezionare un'attività...
Crea una nuova partizione
Crea una partizione di backup
Installa un altro sistema operativo
Ridimensiona una partizione
Ridistribuisci spazio libero
Unisci partizioni
Copia una partizione
Operazioni sulla partizione
Crea partizione
Elimina partizione
Ridimensiona/sposta partizione
Converti partizione
Dividi partizione
Annulla cancellazione partizione
Proprietà
0 Operazioni in sospeso
Annulla
Applica
Disco 1 - 57231 MB
C: 14.998,2 MB FAT32
D: 5.004,6 MB
E: SUPERSTORE 21.218,6 MB FAT32
4.769,3 MB
10.205,4 MB Linux Ext2
FAT
FAT32
NTFS
Linux Ext2/3
Linux Swap
Esteso
Non assegnato
Non formattato
Altro
Utilizzato
Non utilizzato

Unità 1

Partizione	Tipo	Dimensioni	Utilizzati	Liberi	Stato	Pri/Log
Disco locale (C:)	FAT32	14.998,2	11.759,9	3.238,3	Attivo	Primaria
(*)	Estesa	30.992,6	30.992,6	0,0	Nessuno	Primaria
DOCUMENTI (D:)	FAT32	5.004,6	2.861,3	2.143,3	Nessuno	Logica
SUPERSTORE (E:)	FAT32	21.218,6	12.347,1	8.871,5	Nessuno	Logica
Disco locale (*:)	Tipo EB	4.769,3	4.769,3	0,0	Nessuno	Logica
Disco locale (*:)	Linux Ext2	10.205,4	10.205,4	0,0	Nessuno	Primaria
SWAPSPACE2 (*:)	Linux Swap	1.035,4	0,0	1.035,4	Nessuno	Primaria

Quando si esegue PartitionMagic si raccomanda di chiudere tutte le altre applicazioni.

0 operazioni in sospeso

PHOTO 1

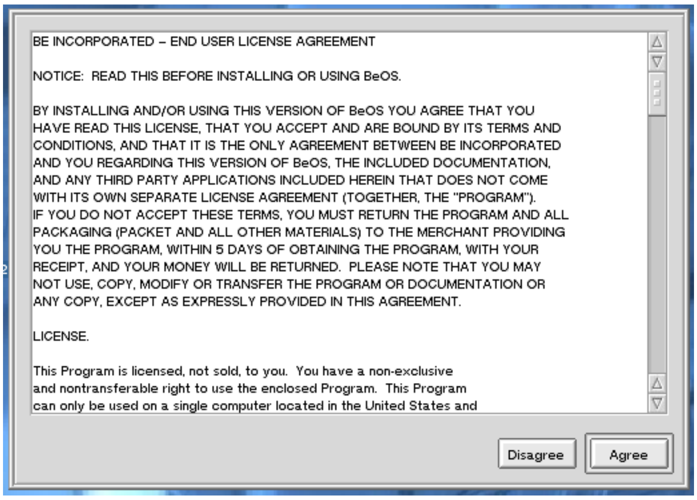


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PHOTO 2

Let's wait the end of the loading phase and after reading and agreeing the Be Inc. legal terms and conditions (**PHOTO 2**), we stop over the "Install from BeOS onto ..." window. At this point if we have already created an empty partition we can choose this one to install BeOS, otherwise we have to follow the next instructions. Proceed expanding the little triangle next to the "More Option" label.

The first DialogBox window appears and the DriveSetup button will be visible; clicking on it, a new window with the full list of the Hard Disks connected to the Computer will be opened. Select the Hard Disk chosen for the BeOS installation and click on the small triangle, near the Drive icon, to expand the additional information. Proceed then with the creation of the new partition, right click on the target disk and select "Setup" from the pull-down menu, then select "Partition" and finally "Intel" (**PHOTO 3**).

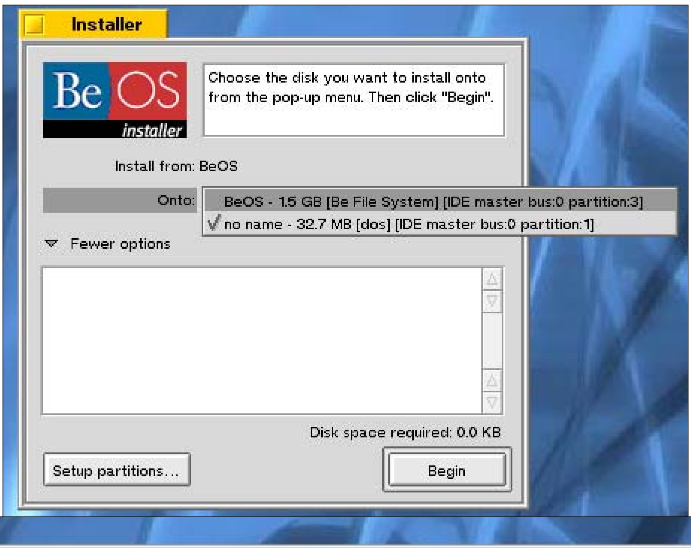
Let's set up the new partition, keeping in mind that the minimum working space given to the BeOS partition (to store all the applications present in the CD) should be at least 1 or 2 GigaBytes.

Good, the partition has been created, all that is left is initialized it; to do this, right click on the disk icon and chose "Setup" and "Initialize", then select the brand new partition and finally the "Be File System" option from the new submenu: releasing the mouse button, the new partition will be correctly initialized (**PHOTO 4**).

We can close the DriveSetup and return to the installation starting page; in the bottom right part of the screen you can notice a nice "Begin" button, yes we are at the fateful moment, press the button and in a few minutes we will have our partition full of system files and applications.

Once the copy is finished, the installer will ask you to install the BeOS boot manager, my advice is to install it. For a System loaded with Windows and BeOS the operation is automatic and does not required any additional user action; while for a multi-boot System (e.g. Windows, Linux, BeOS) is it necessary to act into Linux boot manager configuration. If we assume that LILO (the Linux Kernel MBR manager) is already installed, we can proceed to the BeOS Boot Manager installation overwriting LILO, of course. Reboot Linux with the CD or the FDD and modify the lilo.conf file in the /etc folder. The row we are searching for is the "Boot=/dev/had", if Linux is installed on the master IDE Hard Drive; modify this row to have LILO installed in Linux boot partition (e.g. "boot=/dev/hda3" where hda3 is Linux partition), proceed then with the removal of the LILO boot' "Windows Options", leaving the other kernel flavors as are. Save the modified lilo.conf, open the terminal window and launch "lilo -v" to install LILO. At this point we should have the BeOS boot manager installed: the MBR will start Linux (if LILO is chosen) or the other OSes from the shown list. If we prefer using Grub, the installation steps are quite the same, it's enough to start Linux with a boot disk, move in /boot/grub folder and edit the menu.lst file removing the "Windows" rows; next, launch "grub-install /dev/hda3" from the command prompt, assuming that /dev/hda3 is the Linux partition.

Congratulations, BeOS is installed and ready to go, it's enough to reboot the system and enjoy this wonderful Operating System.

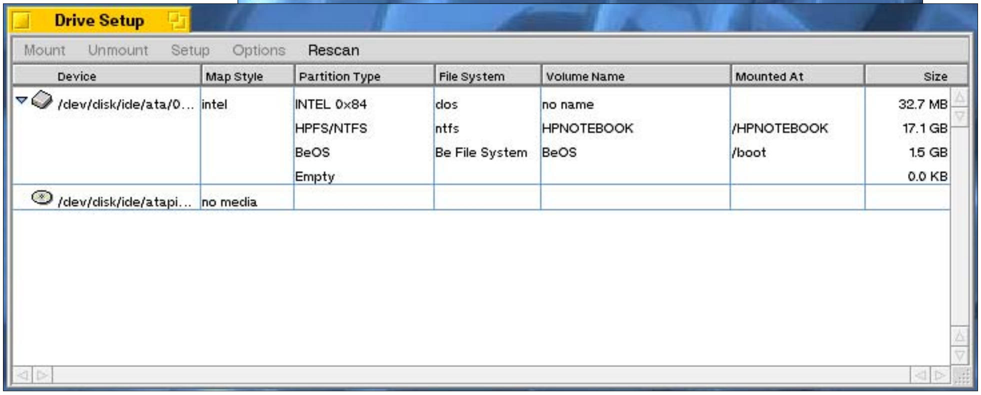


Choose the disk you want to install onto from the pop-up menu. Then click "Begin".

Install from: BeOS

Onto:
BeOS - 1.5 GB [Be File System] [IDE master bus:0 partition:3]
✓ no name - 32.7 MB [dos] [IDE master bus:0 partition:1]

Disk space required: 0.0 KB



Device	Map Style	Partition Type	File System	Volume Name	Mounted At	Size
/dev/disk/ide/ata/0...	intel	INTEL 0x84	dos	no name		32.7 MB
		HPFS/NTFS	ntfs	HPNOTEBOOK	/HPNOTEBOOK	17.1 GB
		BeOS	Be File System	BeOS	/boot	1.5 GB
		Empty				0.0 KB
/dev/disk/ide/atapi...	no media					

PHOTOS 3 AND 4

Scot Hacker.

Exclusive interview

by Andrea Scatena [andyscat@libero.it]

Scot Hacker was a reference for the BeOS community for years.
In this interview he offers his point of view about BeOS, MacOS X and the near feature

Everybody in the BeOS world knows Scot Hacker: the BeOS Bible, the BeTips website, his column on Byte... need I say more?
And now he becomes known also in the world of the Mac: Tales of a beOs refugee, his collaboration with MacWorld.
A while ago, I contacted Scot Hacker and asked him for an interview. He agreed and this is the outcome, completely unaltered.
(A warning, Scot is crystal clear and hits directly the point as always, but you may not like what he has to say this time).

Dear Scot, here are the question for the interview; I'm sorry that they are not very "professional" but it seems I couldn't come up with something better :-)

Please don't apologize.

1) I have known you for your "Tales of a BeOS refugee", and I was so fascinated that I begun searching the web for all things BeOS-related. I still use and will continue to use Os X, but I'm also waiting for the heirs of BeOs to come out and into the light, and I've also bought the BeOS Bible. After all these months, what you wrote on "Tales..." is still true? or what has changed?

Well, I think that question is best answered by looking at Jaguar's feature list.

http://www.apple.com/macosx/jaguar/

Non c'è molto inn questa lista che renda OS X più Not much on that list makes OS X more BeOS-like, except for the addition of an optional journaled filesystem. There were certainly some performance improvements, though OS X is still a LONG way from Be's responsiveness.
Feature-wise though, there are only a tiny handful of things to recommend BeOS over OS X today - the database-like filesystem/Tracker combination, the Translators system, 32 workspaces, and... ? The Workspaces need gets addressed in Panther, and we hear rumors that there will be some database-like stuff in it as well. Pavel and Dominic still work for Apple,
AFAIK, and I would be surprised if they weren't cooking up something similar.

But none of that is worth jack without an active commercial development scene behind it. OS X gives you your user-friendly Unix, and does it with real tractor apps, commercial development, global support.... It's really, REALLY hard for me to understand why there are still people using BeOS when they could be using OS X. Doesn't make any sense. It's like, come on folks,
join the land of the living. Using BeOS today (or YellowTab or whatever) is like some kind of technological necrophilia.

"Uncle Jed's been dead for two years, but we couldn't stand to bury him, so we prop him up here at the dinner table and...."

Be had more than 100 employees and $25 million in the bank at one point.
Full-time engineers and a bunch of committed commercial developers (Adamation, BeatWare, Gobe...). With all of that, BeOS barely stood a snowball's chance in hell. Without any of that, without any hope of developing momentum --- EVER -- it's all so much less than zero. It's very
hard for me to understand why there are still people hanging out in the ghost town.

2) What are your thoughts and feelings about BeOS on these days?

Haven't thought about BeOS for ages, until you wrote me.

3) What are the things that you feel enhance the user experience in Os X? do you miss something from the BeOS days ? (I, for one, have found a likeness between Os X column view and the BeOS right-click navigation).

Yeah, I miss some things like that - right-click nav, live queries stored as files. I like OS X's Dock/menu bar combo much better than Deskbar. I dunno, it's all so long ago, I don't remember or think about it anymore. OS X is just "normal" to me now. One thing I can say is that there was always stuff in BeOS that felt unfinished, unpolished. OS X doesn't have that feeling.
Even though you always know there's more to do, it feels polished, and professional *because it is*.

4) What about the new G5 machine from Apple? Do you think that Apple is again on top of technology and innovation with this machine?

Sure, the benchmarks speak for themselves, even through the small controversies. I just hope they can get it into a laptop.

5)Tell me the truth: what would you do to put your hands on a G5 box?

Oh, gosh. They're not that unattainable -- $3k. My wife and I just dropped that much on a new sewer for the house, which stinks (no pun intended). I'd like to say I'd forgo a new sewer for a G5, but it wouldn't be true.

6) When Zeta and OpenBeOS will come out (and they will) do you think you'll give them a try? And if so, do you promise to let us know what you think about?

Not a chance. I do still have an x86 machine in the garage for emergencies, but I haven't booted it in ages. I have exactly zero interest in trying Zeta or OpenBeOS. I guess they're nice if you just can't afford a Mac -- I can appreciate that -- but if I were in that position, I'd just use Linux.

Once upon a time there were lots of things you could do on BeOS that you couldn't do on other platforms, but that stopped being true even when Be was alive. BeOS was created to address shortcomings in the existing OS es, but Windows and Mac OS and Linux all got heaps better in the later part of Be's life. So the point of running BeOS was getting weak even before Be crumbled.
Today it just seems absurd.

Be's responsiveness is wonderful and I miss it, but the responsivenss is not an end in itself - it's there to enable amazing applications. Reality check - all the amazing apps are on other platforms, and the speed of modern hardware makes the performance diff between OSes practically moot.

Look, sometimes we do things in this life for irrational reasons, for love.
If you love BeOS and don't care about the apps or the practicality, then by all means use it, be happy, it's "all part of life's rich pageant." Just don't start to think BeOS is going to have some kind of renaissance, or take over the world, or provide a means for developers or users to make money.
Love is the only remaining reason to use the system. And maybe that's reason enough.

I used to chafe when BeOS was called a "hobbiest OS." But that's clearly all it is today, and all it ever will be. I barely have time to spend with my new son, time for home improvement, time for bike rides, taiko lessons, or any of the other things I want to do with my tiny shreds of free time.
Monkeying around with a hobbiest OS for no money is not one of those things.
Even though I still love BeOS. I really do.
But we had our fun. A good five year run.
I went home when the curtain closed.

Scot_

BeOS and the factory of videos

by Giuseppe Gargaro [giuseppe.gargaro@tiscali.it]

BeOS can be a good tool in playing DivXmovies and in DVD copying

The DivX's "original sin": DivX was born in 1999 as hack of the Microsoft WMN codec created for internet data streaming.
At the beginning of its history the Windows Media Video was thought out to videoconferences purposes allowing low bitrates and poor configurable options; these "lacks" of functionalities drove a French hacker named Jerome Rota (aka "Gej") to modify and significantly improve the WMN codec.
High bitrates and better streaming management gave birth to DivX.
The new codec spread quickly on the internet and this rapid diffusion contributed to improve its features.
Due to its nature, the DivX codec became a powerful means of illegal computer piracy: used in conjunction with a "Decripter" software, DivX codec allowed to copy DVDs in a easily way.
The DivX codec acquired a bad name and lived with it until May 2000 when Jerome Rota, dismissed the hacking role, with Jordan Greenhall and Joe Bezdek started DivXNetworks Inc.
With its stealth alter ego "Project Mayo", the new "legal" version of the DivX codec grew up until in January 2001 the company simultaneously announcing its DivXNetworks identity and unveiling the next generation of DivX as an open source project dubbed "OpenDivX".
The versatility of the DivX codec enable the rapid proliferation of IP video content, DVDs backup copies, TV and Camera digital video acquisition and recording, etc.

Backup copyes of your own DVDs

First of all, it is necessary a DVD' ripping-enabled software that allows to make a DVD decrypted copy on the Hard Disk; under BeOS you can do it using "DVDRip" based on "libdvdcss" and "libdvdread".
This application has been developed by Eric Petit, a 20 years old guy from Ecole Centrale Paris (France), also involved in *VideoLAN* (Player DVD, DivX, Mpeg) project. (**http://www.videolan.org**)

The use of "DVDRip" is simple and direct. The program shows two Tabs: "Titles" tab allows to ripping a whole DVD in a single file; "Files" tab allows selecting the VOB files to rip. (Download *DVDRip* from BeBits Web Site - **http://www.bebits.com/app/3118**)

Once the DVD is copied on the Hard Disk, we can use "ffmpeg" to convert the VOB files in a DivX format.
First of all you have to install "ffmpeg-11-01-2002-net-server" and then, in a new Terminal Window, run the command line in **TABLE 1** (pay attention to substitute the "ffmpeg_directory" and "VOB_directory" with your own local paths):

It will be enough to run the following command in the Terminal window to create your DivX file; the result should be played in VideoLAN or in BeOS MediaPlayer (with *HybridDivx* decoder installed, downloadable from BeBits Web Site - **http://www.bebits.com/app/2867**)

The 'q' value shown during the encoding phase can assume ranges between 1-2 and 31. The value 1 shows the optimal conversion quality, the value 31 the worse one. If highest values are reached during the conversion phase, you have to decrement the frame rate and/or the frame dimensions.

In Zeta we shall have a new "ffmpegGUI" that will take over this tricky way to rip DVD through Terminal window introducing graphical interface commands.

Let's see now the commands and options description:

-f avi [to set the target video format]

-b 1000 [to set the bitrate (kbit/s)]

-g 300 [to set the GOP length (single frames are grouped in small "Group of Pictures")]

-vcodec mpeg4 [to set the appropriate codec video (in this case the openDivx)]

-acodec mp2 [to set the appropriate audio codec (soon the mp3 codec will be added)]

-ab 128 [to set the audio bitrate (kbp/s) - e.g. 64, 96,

```
ffmpeg_directory/ffmpeg -i VOB_directory/VTS.VOB -f avi -b 600 -g 300 -vcodec
mpeg4 -acodec mp2 -ab 128 -map 0:0 -map 0:3 -bf 2 -y /boot/home/Desktop
/video.avi
```

TABLE 1

128, 224]

-map 0:0 -map 0:3 [to select the right audio track (as you know the DVDs contain Multilanguage audio tracks - using "-map 0:0 -map 0:x" where x is the track number you can select the chosen language)]

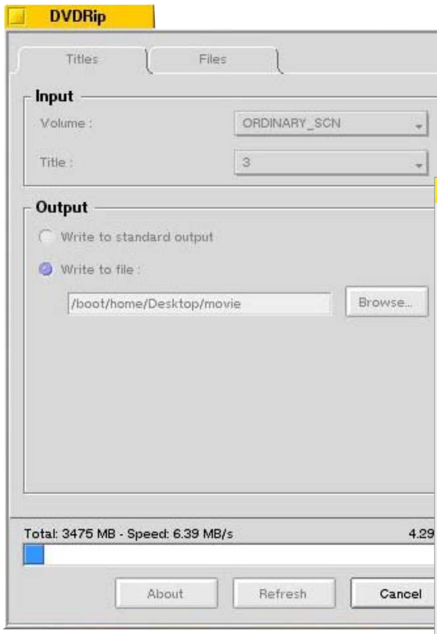
-bf 2 [to create a multiplatform DivX5 video working on BeOS and Microsoft MediaPlayers]

-y [to overwrite the target file (it may seems useless but the current BeOS version of "ffmpeg" does not working well without this setting)]

To have the full list of the options run "ffmpeg" from the Terminal window with no additional commands; with "ffmpeg -formats" you have all the supported Video formats and Codecs.

Of course you can create many templates like the previous one; I am always be interested in Digital Video and you are welcome to send me your own comments and solutions (that will be useful for the next article), thanks.

HandBrake it's another program from Eric Petit. It offers a good new choice to DVD copy on the Hard Disk with a direct conversion to MPEG-4 with no ripping from MPEG-2. (Download *HandBrake* from BeBits Web Site - **http://www.bebits.com/app/3478**)



Input

Volume : ORDINARY_SCN

Title : 3

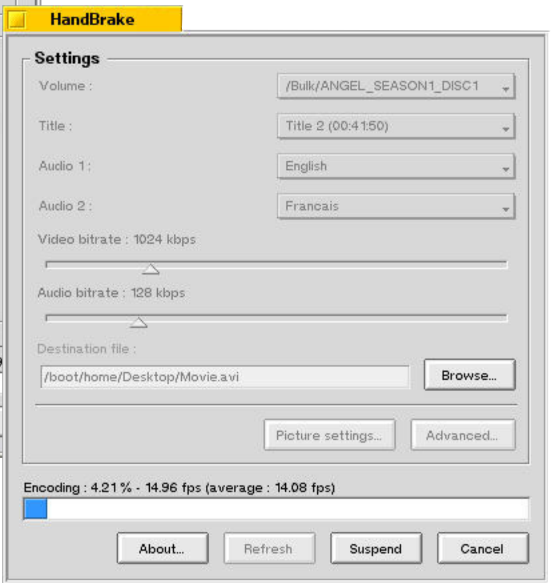
Output

○ Write to standard output

● Write to file : /boot/home/Desktop/movie

Browse...

Total: 3475 MB - Speed: 6.39 MB/s 4.29



Settings

Volume : /Bulk/ANGEL_SEASON1_DISC1

Title : Title 2 (00:41:50)

Audio 1 : English

Audio 2 : Francais

Video bitrate : 1024 kbps

Audio bitrate : 128 kbps

Destination file : /boot/home/Desktop/Movie.avi

Encoding : 4.21 % - 14.96 fps (average : 14.08 fps)

Let's calculate the DivX bitrate

While the DivX uses a video variable bitrate, it's no possible to know if the data rate settings still remain the same during the ripping phase. Usually the final encoded file occupies less space than indicated.

To calculate the bitrate you can use the following formulas:

CDR 80mins - TotalBitRate(video+audio) = 95733 / mins

CDR 74mins - TotalBitRate(video+audio) = 89480 / mins

Using the first example (95733) we have: (718000 KByte *8 bit)/60 sec. (an 80mins CDR can contain usually 735.000.000 byte like as 718000 KByte circa, where 1K=1024)

Let's suppose that you have a video 1 hour and 30 minutes long (totally 90 minutes) and you want to burn in a 650MByte CDR (74 mins long), you have to do the following calculation:

TotalBitRate (video+audio) = 89480/ 90 = 994.2 kbps

Pay attention that the calculated bitrate includes video and audio: the video bitrate should be deducted from the audio bitrate removal; then round it to 994 and subtract the desired audio bitrate (e.g. 112 Kbps):

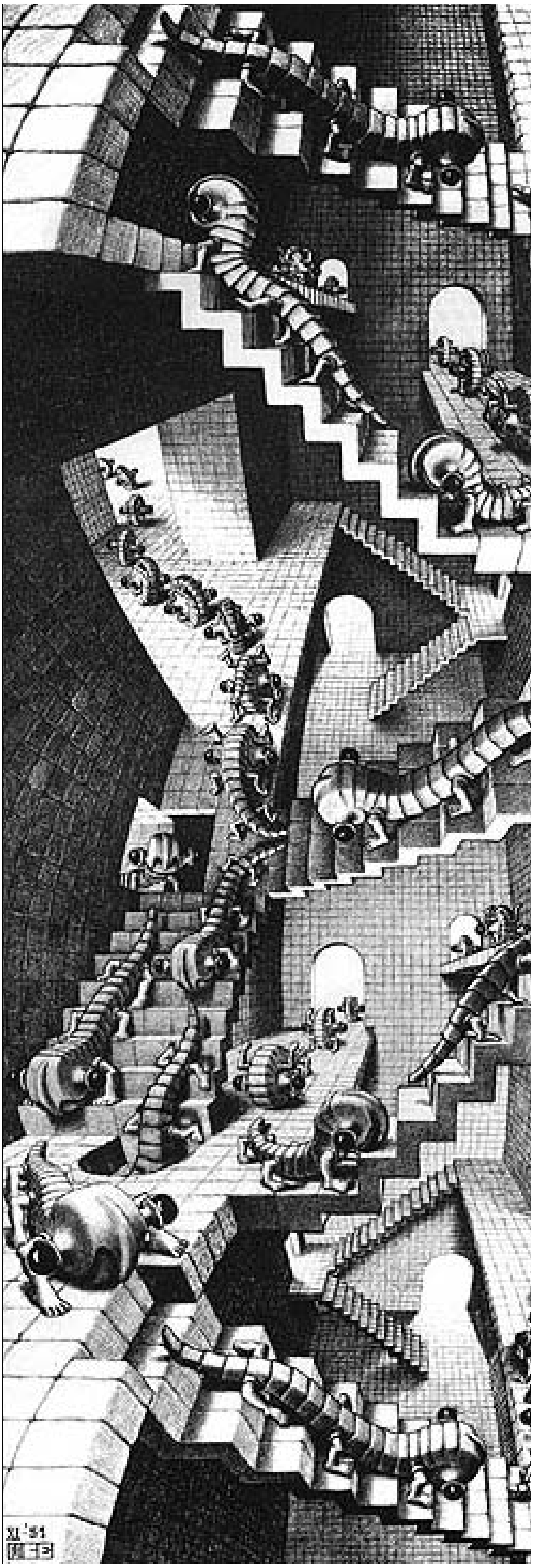
VideoBitrate = 994 - 112= 882 Kbps

One good alternative choice to calculate the DivX bitrate is the *Bitcalc* program.
(Download *Bitcalc* from BeBits Web Site - **http://www.bebits.com/app/3578**).

Players and Codecs to play DivX

To play DivX videos under BeOS you can use the excellent VideoLAN or the MediaPlayer (after installing "HybridDivx"). VideoLAN is an OpenSource program created by the guys from the Ecole Centrale Paris that allows viewing different video format (e.g. DVD, SVCD, DivX, etc.) HybridDivx is a group of codecs to view DivX videos in BeOS MediaPlayer; the decoders included in *HybridDivx* are builded up with the codecs present in the BeOS Personal Edition, in the BeDivX and in the *ffdecoders* version of *ffmpeg*. Curiosity: due to a MediaKit bug, when in MediaPlayer you move forward and backward in the video (during playback), the audio start playing form the beginning while the video streaming continues playing). (Download "HybridDivx" from BeBits Web Site - **http://www.bebits.com/app/2867**).

Another interesting MPEG-4 codec is *3ivx*. It allows elevate compression rates (1:13 of the DVD or MPEG-2 source file) maintaining high video quality. (Download *3ivx* from **http://www.3ivx.com/download/beos.html**).



The original lithography by M.C.Escher which inspired the game

Marble Madness

by Giuseppe Gargaro
[giuseppe.gargaro@tiscali.it]

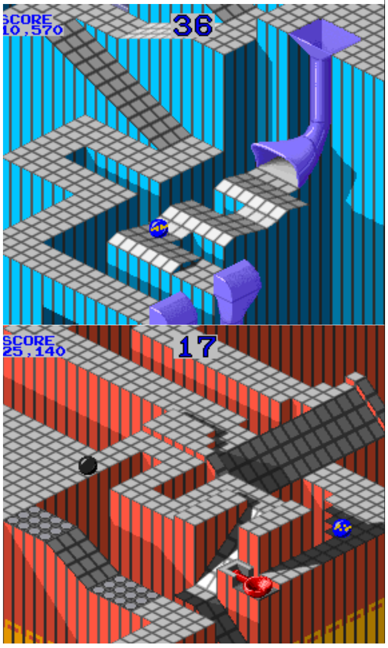
A masterpiece in the history of videogames. A really... "mad" game

Here we are again on our tour in the video-games world, ready to discover the ideas, projects, visions and arts behind this creations of the human intellect, which more or less consciously have influenced milions of people of my generation.
Having luckily escaped the dungeons in "Prince of Persia" in the last article, here we are, ready to roll up and down in a wonderful world of colored tiles with "Marble Madness", one of the more fascinating games I've ever played.
Surely Marble Madness is one of the most beautiful game of all times due to the beautiful world that come in sight, a world that in the author's intentions was the essence of an abstract and completely synthetic universe, with a really strong influence from the works of M.C.Escher.
The author, Mark Cerny, was influenced by four litographs that his relatives had given to him as a gift when he was still a child.
The game is supported by a catchy soundtrack that follows the game rythm, and this is nice news considering that before and after it the music was completely independent from the player actions.
The author of Marble Madness, Mark Cerny, was still eighteen when he realized this game: born in Berkeley, California in 1964 he was a developer at seventeen, and an avid arcade player.
Thanks to a competition organized by Atari to let young talents to realize a game, Mark, with Bob Flanagan created Marble Madness for the new Atari System 1.
In 1982 Cerny left Atari and begun to work at Sega, where he remained for seven years, working on games for the Master System and the Genesis; in the '90s worked on "Crash and Burn" and "Total eclipse" for 3D Multiplayer.
Marble Madness was the first game for the Atari System 1, an arcade which cabinet contained a 68010 CPU, while the sound was controlled by a 6502.
The game was the first to present a pseudo-

3D graphic with a stereophonic sound and that could be played by two players togheter; the cabinet could be converted to play many other games (Indiana Jones, Road Runner...) so very soon Marble Madness gave place to other titles, while still living on the many portings on console and home computers.
Purpose of the game is to lead a ball to the end of the race while the adversaries (black balls, acid...) do anything to make you waste time.
The only heir to Marble Madness was "Marble Madness 2, Marble Man", created in Atari after the leave of Mark Cerny, but it was never released though tested on many arcades in 1981: the game sported other levels and the ball was animated when it died or won; there were other enemies as well (tomatoes, knives, scissors...) but on the whole was a little bit trashy.

The Atari System 1

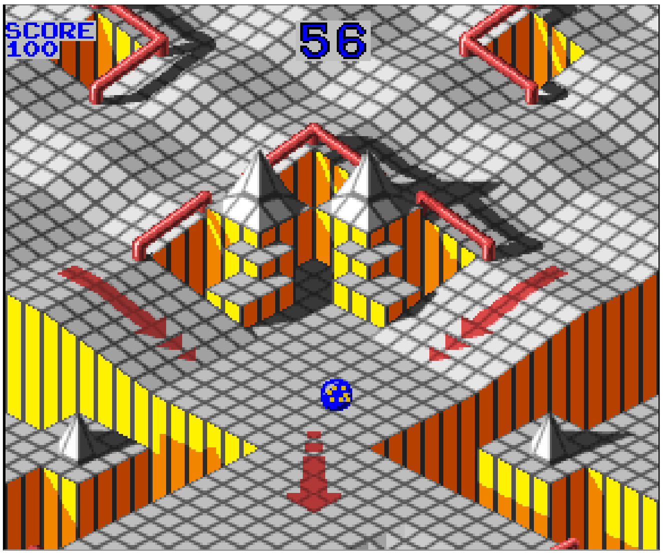
Mark Cerny



Some screenshots of the game. You should notice the pseudo 3D scenery

LINKS

http://www.classicgaming.com/rotw/marble.shtml
http://www.bodenstaendig.de/marble/
http://www.setpixel.com/content/?ID=22



LET'S EMULATE!

Thanks to the fantastic emulator MAME we can relive the emotion of playing with the fantastic Marble Madness.

MAME **http://www.mame.net/downports.html** for Macintosh, OS2, BeOS, QNX, MorphOS, AmigaOS, AmigaPPC, AROS, RISC OS etc.

EMUNEWS

Sixtyforce 0.7.0 (Os X, MacOS) this is an N64 emulator, is now beyond alpha state and is much more stable:
http://www.sixtyforce.com/
VisualBoy Advance v1.6a (BeOS, Os X) new version for this GameBoy Advance emulator full of updates:
http://vboy.emuhq.com/downloads.shtml
BeS9x 1.41-1 (BeOS, Os X MacOS) new version for the SuperNintendo BeOS emulator:
http://www.beemulated.net/console/snes.phtml
For Mac there are two versions One for Os X and one for MacOs:
http://www.zophar.net/mac/snes.html
ScummVM 0.5.1 (MorphOS) ScummVM is a virtual machine to play LucasArts games (Monkey Island, Loom, etc.), this is an update of this emulator for MorphOS:
http://butterflyvale.de/scummvm/
Virtual Jaguar GCC/SDL v1.0.6 (Linux) emulatore di Atari Jaguar.
STEEM 2.6 (Linux) new version for this Atari ST emulator:
http://www.blimey.strayduck.com/download.htm
MAME 0.72 (BeOS)update of the awesome M.A.M.E. emulator for BeOS:
http://www.beemulated.net/arcade/multi.phtml
AdvanceMAME v0.4.0 (Linux, Os X) unofficial version of the famous emulator M.A.M.E.
http://advancemame.sourceforge.net/download.html

The Migthy Spectrum

by Giuseppe Gargaro [giuseppe.gargaro@tiscali.it]

The ZX Spectrum has contributed to near an entire generation to the world of home computing

In the first 80s a whole generation discovered computers thanks to the first 8bit home computers. Among those machine ZX Spectrum had a main role, with almost one third of the market, dominated for the remaining part by the Commodore machines (Vic 20, 64 and 128).

Spectrum history is absolutely bond to that of its creator, Sir Clive Sinclair, eclectic genius born in Richmond, England: uncle Clive had a great experience in low-price consumer electronics and a great passion for miniaturized objects: thank to him we have mini-amplifier, mini tv, pocket calculators and many other little things.

ZX 80 was a little calculator that gave him fame and the title of baronet for industrial worthiness.

In 1980 came out the first creation of Sinclair Research, the ZX80, a little computer with a Zilog Z80A cpu at 3.5 mhz with 1 K RAM and 4 K ROM, something that today makes us smile, but back then was something impressive.

The next year came out the ZX81, a ZX80 compatible machine with the possibility to expand RAM to 16 K while the ROM was 8 K.

Another year and came out the mighty ZX Spectrum, which features where awesome for those years: 16 K of RAM expandable to 48 K (the 48 K limit was due to the Z80 that could address 64 K of memory, 16 of which reserved to ROM), graphic resolution was 256x192 pixel with 8 colours managed, to save memory, in squares of 8x8 pixels, each with max two colours.

It was a powerful and inexpensive computer which dominated the scene without any contrast until 1983 and the first Commodore 64 machines, the same year in which saw the light the Spectrum Plus 48K.

Commodore 64 was superior for graphics and sound but has a very bad Basic interpreter.

Another three years and came out QL (with a Motorola 8 bit 68008 processor) and the Spectrum 128K, with a Yamaha audio-chip.

In the years following 1986 things went bad for Sinclair Research, and the whole project was sold to Amstrad.

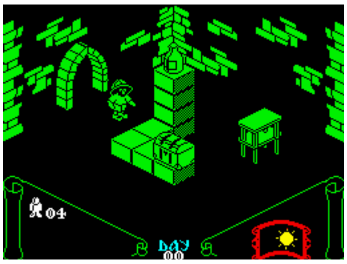
There were many Spectrum clones that saw the light around the world, beginning from the Timex produced by Sinclair iitself for the american market, to the more or less authorized clones produced in East Europe, and among them we need to remember Moscow, which had a great diffusion in Russia, beginning from 1988.

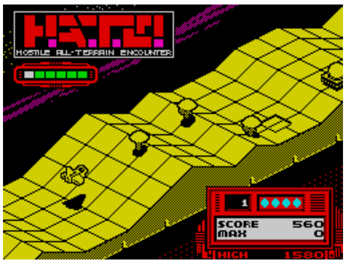
The Spectrum was one of a few micro-computers in those days with a big deal of programming languages: Basic, Fortran, Pascal, APL etc.

Today, thanks to many emulators available for almost all operative systems, the ZX still lives for the joy of the fans.

Here are some sites about the Sinclair from which can be downloaded software and games:

The World of Spectrum
http://www.worldofspectrum.org/
Planet Sinclair
http://www.nvg.ntnu.no/sinclair/
TZK Vault
http://tzxvault.retrogames.com/
The Best of Spectrum Games
http://www.emagsoftware.it/tbosg/
80 Nostalgia
http://www.80nostalgia.com/computers/spectrum/





DON'T MISS

Atic atac --- A trip in a fabulous castle, you have to escape searching for the keys , a great classic
H.A.T.E. --- a scrolling game with an exceptional look and feel
Knight lore --- great 3D adventure set in a castle
R-Type --- a real masterpiece with a stunning graphic (horizontal scrolling space game)
Rick Dangerous --- great playabilty

EMULATORS

On the fantastic site "The World of Spectrum" you can find spectrum emulators for almost every system and hardware platform: Unix, Amiga, BeOS, Macintosh, Acorn Risc OS, Psion, Playstation, Java, Atari, etc.

http://www.worldofspectrum.org/emulators.html

REBOL - part II

by Davide Gessi [davidegessi@tin.it]

How to develop Tracker extensions in Rebol

A few days ago, reading an old computer magazine, I found an article in which it were described deeply the commands of CP/M, the old operating system for Z80 processors. It was an OS that didn't permit the execution of more applications togheter, had a few commands for file management, and didn't have the concept of sub-directory... a number of limitations that make one smile at today, but it was a great OS, vey stable, with thousands of applications. One of the many reasons for its success is undoubtly its semplicity and stability. Today simple and stable are adjectives that are not right to describe the actual IT landscape: often using Windows XP, I feel that my poor processor is crumbling under the weihgt of tens of millions code lines. The "all-in-one" philosophy (one browser for local files and internet, a media player that can burn cds, integrated mail and newsreader clients) makes applications slow and heavy, as well as a neverending source of bugs. BeOs is the land of happines, from this point of view. Tracker is fast and light, Net Positive loads in a second and my processor sings aloud, happy. The core idea is to mantain applications light and to add functionality by way of external modules, loaded only when needed... this is the case for images with the Translators, for multi-media decoders and for the Tracker add-ons.

Wrapper in C++

Tracker extensions are those that one can call by right-clicking on selected files in a tracker window. Every extension is a file present in the folder "/boot/home/config/add-ons/Tracker": adding or tacking a file in this folder will add or take a voice from the menu (**FIG. 1**).

Rebol is an interpreted language, so it is not possible to use it straight to create an add-on, it is but possible to write a sort of interface in C++ that wil let communicate the Tracker with our script.

It could seem a complicated and obscure procedure, but things are really simpler than this; a wrapper's work could be outlined this way:

- collection of the parameters passed by the Tracker (it's just the path of the selected files);
- identification of the name (e.g. "convert2png");
- execution of the Rebol script with the same name as the wrapper with the ".r" extension (e.g. "convet2png.r") placed in the folder RebolAddons (which we have to create).

In this way we have a generic wrapper that we can re-use with all the scripts we want to, It will suffice to rename it to let it call the right Rebol script. In the **TABLE 1** we report the brief source of the wrapper. I am not a C++ developer and so the code could be better... and waiting for comments and critics by some guru in this field, meantime I thank Alexander G. M. Smith and Nathan whitehorn for their precious hints.

When compiling remember to et the project as "AddOn" in the project preferences in BeIDE.

Add-on in Rebol

Once compiled the wrapper we are ready to begin the task of building our first add-on.

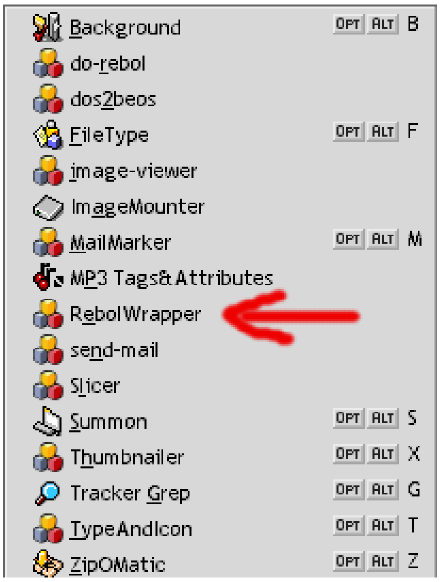


FIG. 1

The received parameters, that is the complete paths of all the files selected at the moment of the add-on invocation, are found in the variable system/scripts/args"; it is a string with paths separated by a space and with the actual spaces between the names replaced by the hash character "#". To obtain in Rebol a block with the names of the files it will suffice this portion of code (let's call it "part 1" to make things easier):

```
;part 1
;recovering the string passed to the
;command line
file: system/script/args
;creating a block from the string
file: parse file " "
;for every file take the hash-mark and
;insert a space
forall file [file/1: to-file replace/all
file/1 "#" " "]
;taking the series pointer at the begin-
ning
file: head file
```

At the end of the sequence of instructions we will find in the "file" block the paths of the selected files, ready to be used for everything we can come up to.

As a first example we can create a script which converts text files with DOS line-endings in correct

```
//
// © Settembre 2003 by Davide Gessi davidegessi@tin.it
//

#include <Application.h>
#include <InterfaceKit.h>
#include <StorageKit.h>
#include <stdio.h>
#include <string.h>
#include <Roster.h>

#define MAXFILEREF 100

extern "C" void process_refs(entry_ref dir_ref, BMessage *msg, void *)
{

      // Loading the parameters array to pass to the rebol script

      char *argv[MAXFILEREF];
      BPath path;
      BEntry entry(&dir_ref);
      entry.GetPath(&path);

      int refs;
      int i;
      entry_ref file_ref;
      for (refs=0;(msg->FindRef("refs", refs, &file_ref) == B_NO_ERROR) &&
                  (refs < MAXFILEREF - 1);refs++) {
            entry.SetTo(&file_ref);
            entry.GetPath(&path);
            argv[refs + 2] = strdup(path.Path());
            for (i=0;i<(int)strlen(argv[refs + 2]);i++)
                  if (argv[refs + 2][i] == ' ') argv[refs + 2][i] ='#';
      }

      // Searching the AddOn name

      image_info info;
      int32 cookie = 0;

      while (get_next_image_info(0, &cookie, &info) == B_OK) {
            if ((char *)process_refs >= (char *)info.text &&
                  (char *)process_refs <= (char *)info.text + info.text_size)
                  break;
      }

      // Input the name of the script to be launched

      char AddOnFullPath[200] = "/boot/home/config/add-ons/Tracker/RebolAddons/";
      strcat(AddOnFullPath, info.name+34);
      strcat(AddOnFullPath, ".r");
      argv[1] = AddOnFullPath;
      argv[0] = "-s";

      //
      // Launching the script
      //

      status_t status;
      status = be_roster->Launch("application/x-vnd.REBOL", refs + 2, argv);

}
```

TABELLA 1

BeOS line-endings.
In Rebol it's an almost trivial thing to accomplish: the "read" and "write" instructions do this kind of conversion natively.
This is the code:

```
;part 2
;for every file
forall file [
        ;reading and writing the file in
        ;text mode
        write file/1 read file/1
]
```

Let's call, for simplicity, this code "part 2".
This is the extension's core, and only this thing will change in the other examples (with some other field in the header).
Let's create a new text file in the RebolAddons folder, and insert an header for the script:

```
#!/bin/rebol
REBOL [
        Title: "Convert file terminator"
        Date: 4-Sep-2003
        Version: 0.0.1
        File: %dos2beos.r
        Author: "Davide Gessi"
        Email: davidegessi@tin.it
]
```

This header need to be inserted in every Rebol script file: first line is called "she bangs" and tells the system shell where to find the interpreter, the rest is the Reboll header.
Note that the header has not a defined structure, the fields are merely a convention, and everything could be easily reduced to a "REBOL []".
My suggestion is to compile them anyway, it takes only a moment and they keep a sort of "digital signature" of your code around the web.
After the header, we add "part 1" and "part 2" and save the file as dos2beos.r, in the folder /boot/home/config/add-ons/Tracker/RebolAddons.
Last step is adding the wrapper: let's take the file form the compiling in the precedent paragraph and copy it in the Tracker's add-on folder, let's rename it "dos2beos".
That's all, we have to find some file in dos format to see our baby in action.
I hope everythng is fine, we just made the first round, and now it begins the creative and most interesting part.
In each example the script structure we have seen till now will remain the same, only "part 2" will change.
We will use Rebol "VID dialect", that is an integrated aprt of Rebol that lets to manage and visualize masks and graphics elements.
To dig more on the subject I suggest the tutorials present on the Rebol site: **http://www.rebol.com**.

A simple image viewer

Let's create an add-on with the purpose to view images selected in sequence.
To visualize an image in Rebol we need these commands:

```
view layout [image %fileimmagine]
```

so our add-on will be like this:

```
;part 2
;for every file
forall file [
        ;creating a layout and showing the
image
        view/center-screen layout [image
file/1]
]
```

Save the file as image-viewer.r and make a copy of it in the wrapper and rename it image-viewer.
Now testing our code... nothing awesome, but with a few lines of code we have reached our goal.

A "cutter" for the images

VID permits the associations of a series of effects to an image, with which one can manipulate it, both the content and the dimension.
There are many applicable effects, form graphical filters like blur, sharpen, colorize, emboss to the functions of rotation, reflection and resize.
We'll use the effect called "crop".

This is the syntax of crop:

```
crop xy wh
```

where x, y and wh are the coordinates that identify the area in which the filter acts.

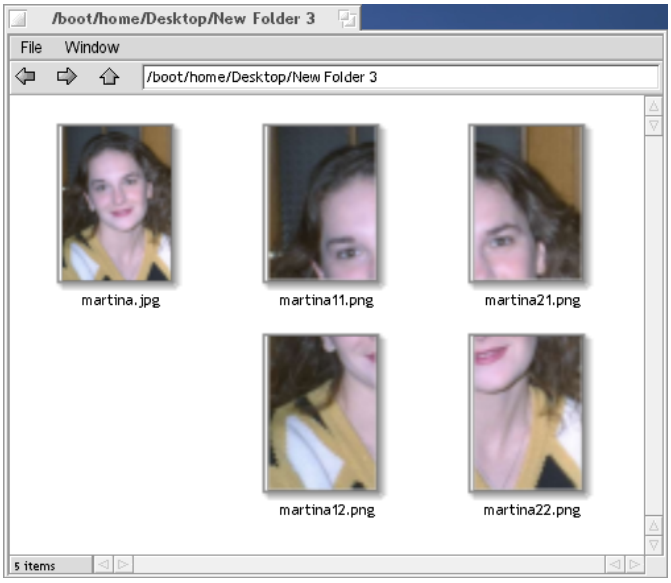


FIG. 2

FIG. 2

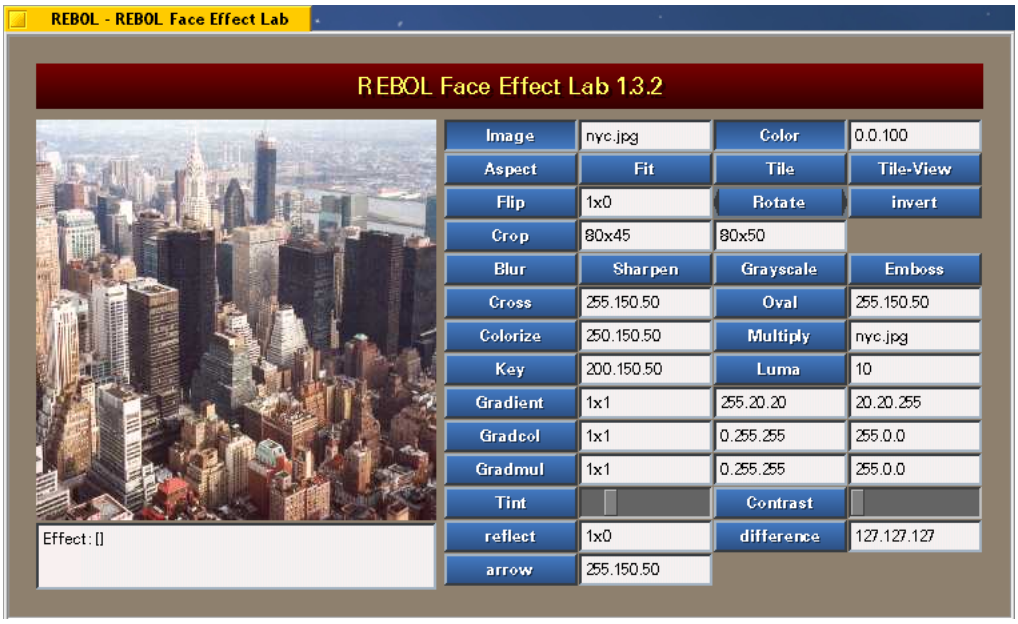


Image	nyc.jpg	Color	0.0.100
Aspect	Fit	Tile	Tile-View
Flip	1x0	Rotate	invert
Crop	80x45	80x50	
Blur	Sharpen	Grayscale	Emboss
Cross	255.150.50	Oval	255.150.50
Colorize	250.150.50	Multiply	nyc.jpg
Key	200.150.50	Luma	10
Gradient	1x1	255.20.20	20.20.255
Gradcol	1x1	0.255.255	255.0.0
Gradmul	1x1	0.255.255	255.0.0
Tint		Contrast	
reflect	1x0	difference	127.127.127
arrow	255.150.50		

Effect: []

So having loaded the image of a "face" type object:

```
fac: make face
[image: %martina.jpg]
```

it is possible to apply the filter using crop:

```
fac/effect: reduce
['crop xy wh]
```

We resize then face so we don't save the remaining grey part:

```
fac/size: wh
```

and finally we save the image in a .png file:

```
save/png %martinacrop.png to-image fac
```

Assembling all tose lines of code in one script we have the code as in **TABLE 2**.

Let's copy this portion of code as usual in the skeleton provided before, saving it as slicer.r and creating the wrapper, the result is our "cutter".
I suggest you to play around with this code, trying different kind of filters; for example it should be useful an add-on to rotate the images taken with a digital camera, or one that lets create a web page with a thumbnail gallery by selecting a folder full of images.
To realize what you can do in Rebol to manipulate images try the application "effect-lab.r" (almost 5 Kb of an app!) which can be downloaded from the example library present in the Rebol site (**FIG. 2**).

CONCLUSIONS

Trying not to incurr in the wrath of our brave editor Gian Davide, I'll stop here our second date with Rebol, hoping I have not taken too much space for the other articles and that I make you curious enough.
I personally use myself some add-ons developed this way, and I assure you that I have never met any problem, and that they work great.
The source dimension of those scripts let's you understand how much productive Rebol is in respect of other languages: six lines of code for the text converter, six for the image viewer and sixteen lines for a non trivial image manipulator are really few; using C++ we would have needed more effort from our part and a much deeper knowledge of the system libraries.
Till the next time.

```
;parte 2
;defining the primary function

slicer: func [
  "Divide an image in tiles"
  img-file [file!] "name of the image to
divide"
  n [number!] "number of divisions to make"
  /local img fac xy wh x y file
][
  if error? try [img: load img-file] [
    alert "Cannot load image." return
  ]

  fac: make face [image: img]

  wh: img/size / n
  repeat x n [
      repeat y n [
        xy: (to-pair reduce [x - 1 y - 1]) * wh
        fac/size: wh
        fac/effect: reduce ['crop xy wh]
        file: rejoin [head clear find copy
img-file "." x y ".png"]
        save/png file to-image fac
      ]
    ]
]

n-divisioni: 2
;per ogni file
forall file [
        ;divide the image
        slicer file/1 n-divisioni
]
```

TABLE 2

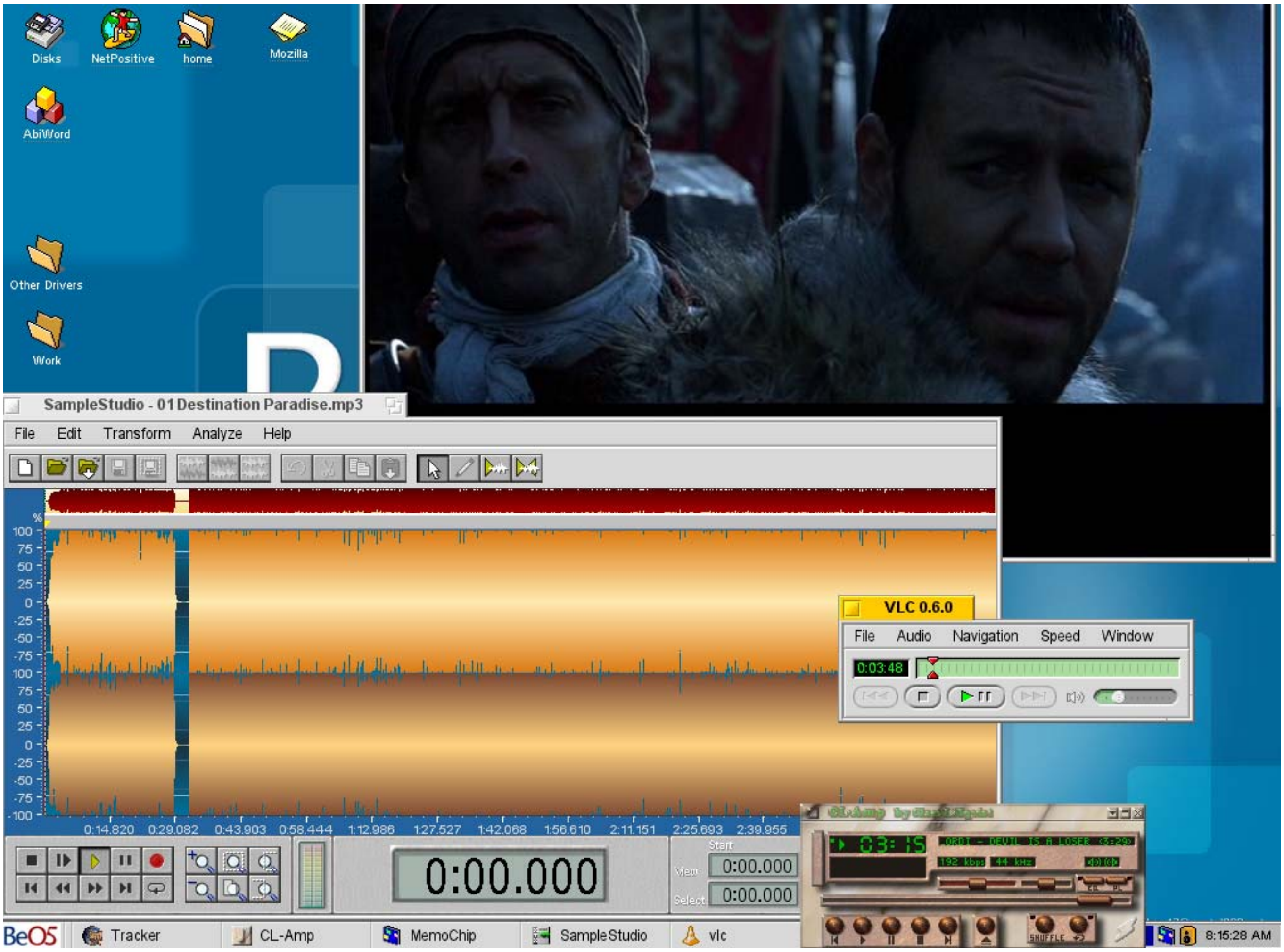
MAX edition. Last of the Be...

by Federico “daf” Da Frassini [daf73@interfree.it]

We tested the new Max Edition, the last of the series

BeOS MAX. For more than one year this name represents the last hold, the only tangible proof for the outer world that our beloved Operating System is still alive and that for someone BeOS remains a choice.
Certainly if the Be, Inc. hadn't released the free version of its own Operating System, at this time BeOS would be only a memory in the Hard Disks of the ones that had the chance to know and buy it. It's thanks to the Personal Edition, in fact, the community has succeeded to preserve itself, new users are born, and open source projects developers have had a system to work with.
Nowadays the neophyte that tries to install the Personal Edition could be disappointed: first of all the assumption of a FAT32 hard disk partition and a processor older than AthlonXP or Pentium 4 series. Furthermore the included old dated drivers and the obsolete default applications could make a bad impression on someone.

It's from the Personal Edition that the different BeOS "distributions" (term taken from Linux world) were born. Especially BeOSMAX, kept by the Greek Vassilis Pernatzakis (aka vasper), gave the user a "ready to use" System with a modern browser, instant messaging programs, a good multimedia player, development and entertainment tools and the last available versions of the drivers and updates.
Let's start from the beginning. After downloading and uncompress the 270MB package, we will find lot of text files and some tools to help the user during the creation of the installation CD-Rom (for Windows users there is also a useful .cue file for Nero burning). The first thing I

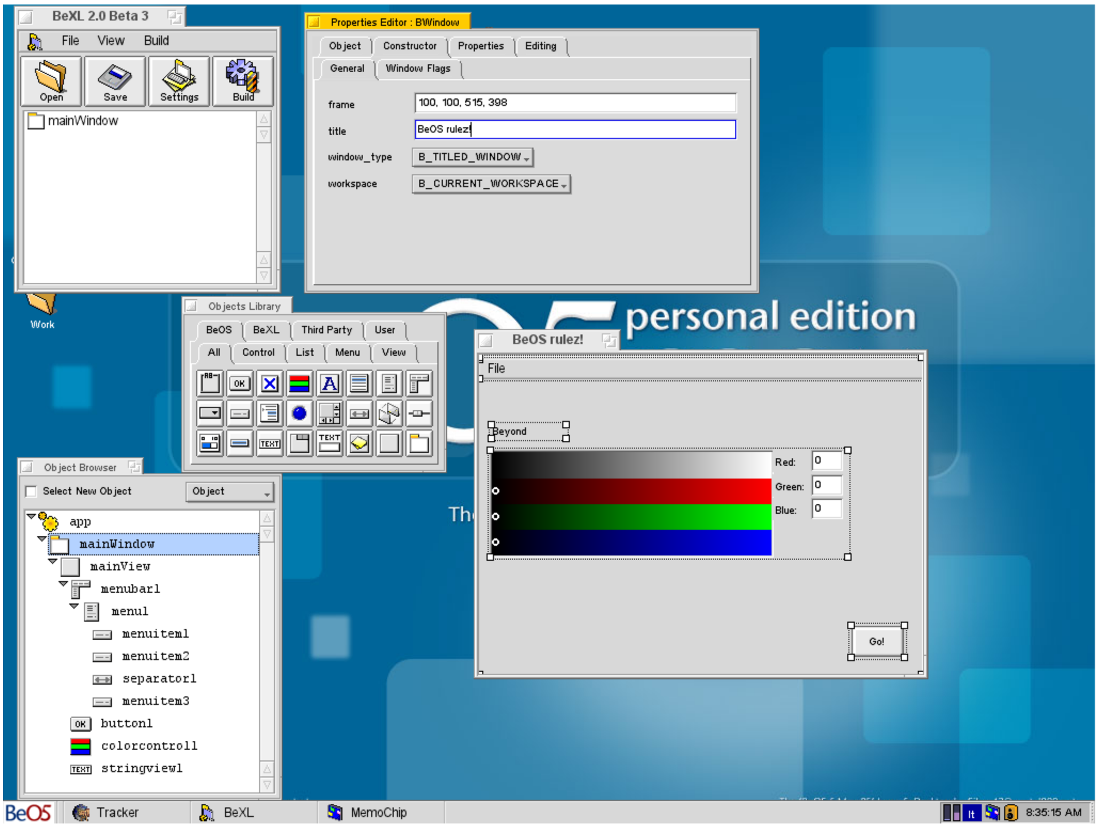


noticed was the lack of patched CD's boot images for AthlonXP and Pentium 4 microprocessors. I thought to download them separately but I found the first surprise: vasper has included them in the main package. So good! Once the installation CD is created we can boot from it and wait until the personalized welcome message introduces the good old Installer. Chosen the right partition we can personalize the list of the applications to install: we have a plenty of choice, thanks to a trick thinked up by BeosMAX team: all the applications are installed in a compressed format and unshrunk at the end of the installation process, saving useful space on the CD.
The first System boot gave me a Deskbar crashes. I had the same problem many times until I cleaned the UserBootscript. It could be that the problem is related to my hardware stuff; anyway a much more simple installation wizard should be much better.

The applications bundled with the distro are almost all the last releases available, well-kept it's the section dedicated to the PE and Globe editors, good documentation and some Visual Development Tools, registered version of BeXL and the ever-present classical version of BeIDE.
Near the indispensable internet applications BeShare and Mozilla (the Nightly Build 1.5b would be better replaced with the last 1.4 milestone) there are the instant messaging programs, but where are Gim-ICQ and BeAIM? The multimedia lovers can find the right tools to play every audio and video file, the ever-present VideoLanClient, the Winamp clone CL-Amp and the registered version of SoundPlay. Beside this one, some audio editors and the DVD-Rip complete the multimedia scenario and show the Operating System full potentialities. Unfortunately the good and useful Digital Audio CD ripping program Biffuz Gogo Frontend / GoGo Gadget, and the MediaConverter+ are missing.
The Game section is a bit disappointing: there are different but old dated titles instead of the fresh and cool released ones. Same question with Office-like products but it's not a BeosMAX fault: in the productivity software world only GoBe Productive has something really usable while the remaining ones must be satisfied with the incomplete Abiword porting and with the obsolete Sum-it spreadsheet.

Definitively the BeOSMAX it's ideal for those whom want to try the System and have an handy, easy and complete installation to show to their friends. It's also true that whoever will be an expert BeOS user, for sure will try to install, configure and customize his own Personal Edition v.5.0.3.

For the future, Vasper has announced that as soon as Zeta will be released he will stop the BeOSMAX updating because he doesn't want to compete with the German Company and its great investments in BeOS. This actually could be the last distro based on PE, waiting for the OpenBeOS birth. The forthcoming name for the next OBOS-based System has been already thought out: WalterOS (Window ALTERnative OS); just like the joking suggested name from Bruno G. Albuquerque for OpenBeOS.
Personally I would like to have a new "BeOSMAX final" updated with small corrections: the fast Firebird instead of Mozilla, some good games, last version of the LocaleTracker with better localization; all the community is call to help ... do not hesitate to send the updates!
However that may be, in the near future our System is called Zeta, with no discussion; heartfelt thanks to the entire communities and their enthusiasm ... Keep up the good work!


Properties Editor : BWindow

frame: 100, 100, 515, 398
title: BeOS rulez!
window_type: B_TITLED_WINDOW
workspace: B_CURRENT_WORKSPACE

Red: 0
Green: 0
Blue: 0

Tools for the WEB

by Marco Begliardo [marco@marcobegliardo.com]

A few tools to create and test PHP dynamic pages with BeOS

If we have to think to the last ten years real informatics revolution, we must think about one single word: the Internet.

For the owners of a simple computer with a modem, the possibility to connect to the "net of nets" has created unthinkable communication possibilities.

The most evident aspect of the Net is certainly the World Wide Web. Nowadays there are millions of Web sites on-line and different technologies for building them up: from the basic HTML, through the client/server side scripting and web services, to Flash animations.

Among the different server side scripting languages, certainly *PHP* (*PHP Hypertext Preprocessor* - **http://www.php.net/**) is one of the most used and powerful; thanks to its Open Source nature there are many distributions based on different operating systems, included the BeOS.

It's now time to install it with a Web Server, and start to create our first dynamic PHP page.

BeOS gives to its users a native fully functional Web Server program: Poorman (the console is in the "BeOS > Applications" menu).

Unfortunately Poorman, even if it works as basic HTML Server, does not support any server-side scripting language.

My advice is to install the BeOS open source *Robin Hood Web Server* (**http://www.bebits.com/app/2048**), with the *PHP Handler* (**http://www.bebits.com/app/1883**) and the *PHP interpreter v.4.0.4* (*http://www.bebits.com/app/566*).

These are the easy installation steps:
1) Unzip Robin Hood package
2) Unzip PHP Handler package
3) Copy the file "{…}/PHPHandler/obj.x86/RHPHPHandler" in "{…}/RobinHood/server/robin_hood_modules/" folder
4) Open the Robin Hood console clicking on "{…}/RobinHood/RHConsole" file
5) Open the configuration file from "File > Edit Virtual Hosts" menu, and complete the command with the string "VRes: pattern="*.php" type="application/x-httpd-php" real=true;"

It's time now to install the PHP interpreter:
1) Unzip the PHP interpreter package
2) Click on "{…}/php-4.0.4pl1/installer.sh" file

The Robin Hood' default web publish folder is in "boot/home/public_html"; it's in this location we have to put our web pages. Now, we need to check if this folder exists, if not we have to create it. Finally we open the Web Server console and choose the option "Controls > Start Server": if we did correctly all the previous operations we can see in the console window the message "Server Started".

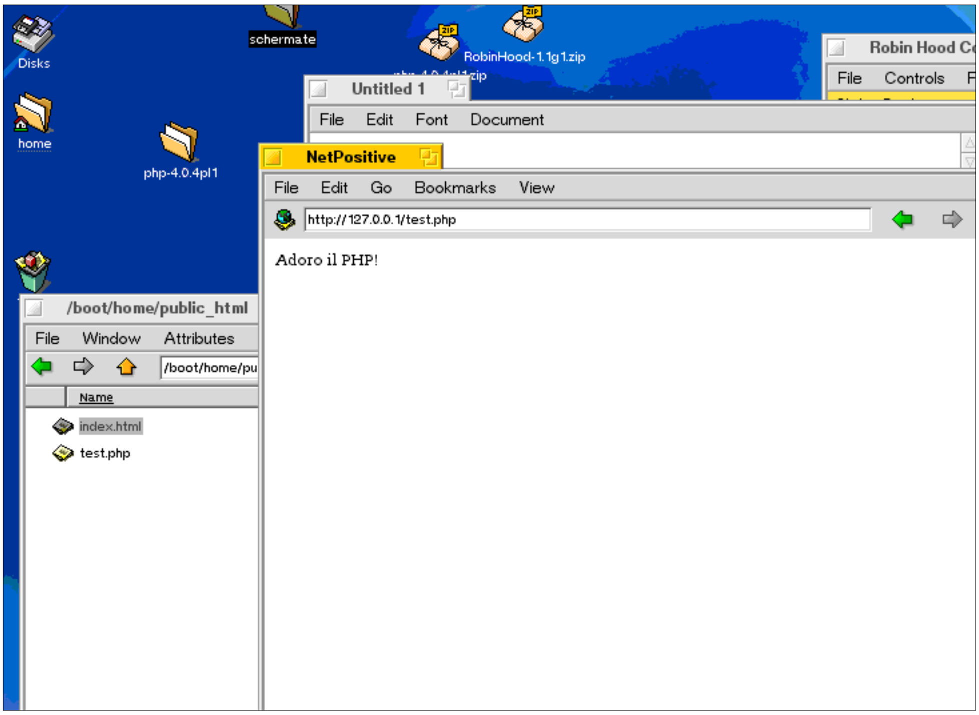
It's now necessary to create our first web page; to do that we can use StyleEdit, the system editor application, through "BeOS > Application > StyleEdit" menu.

This is the HTML code to write in:

```
<html>
<head>
<title>My web page
</title>
</head>
<body>
Hello World!
</body>
</html>
```

This file should be saved in "boot/home/public_html" folder with the name index.html (as default Robin Hood uses this name as standard start page)

Before trying the new HTML page, we need to check if the security permissions settings grant the read access to all the users; to do that, it's enough to right-click the



http://127.0.0.1/test.php

Adoro il PHP!

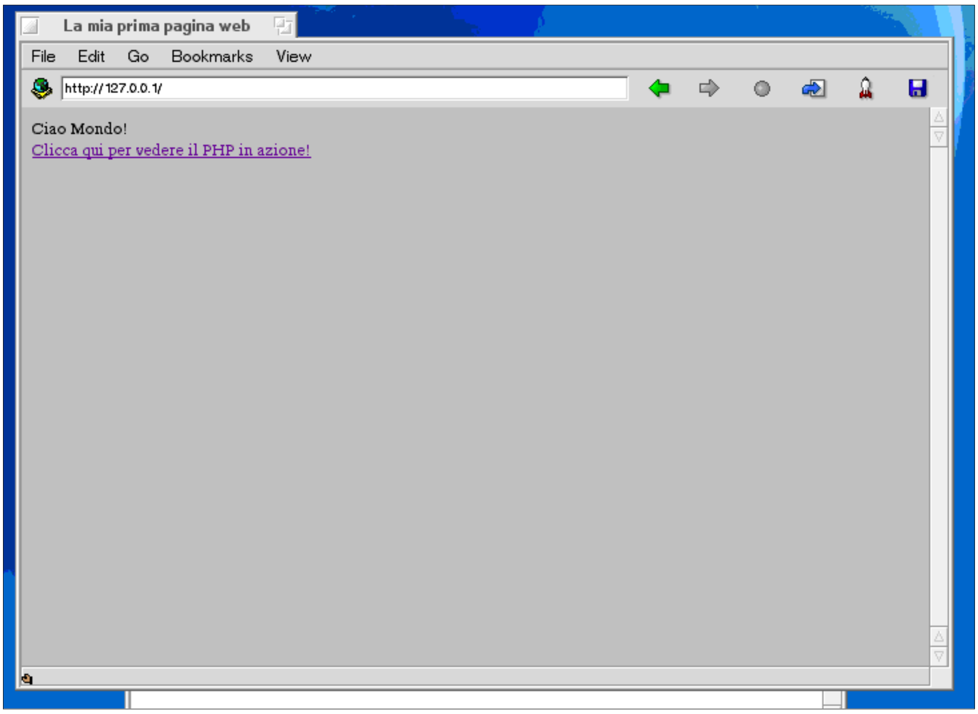
The PHP page in the browser window

mouse, choose the option "GetInfo" and check the "Read" box for the user "Other".

It's time to test the page: open the NetPositive browser (BeOS > Applications > NetPositive) and type in the URL http://127.0.0.1. "Hello World" message should appear!

Our work is not finished yet. So don't rest on one's laurels 'cause we need to write down some dynamic PHP pages!

Open a new StyleEdit document and write the following code:



http://127.0.0.1/

Ciao Mondo!
Clicca qui per vedere il PHP in azione!

```
<?
echo ("I love PHP!");
?>
```

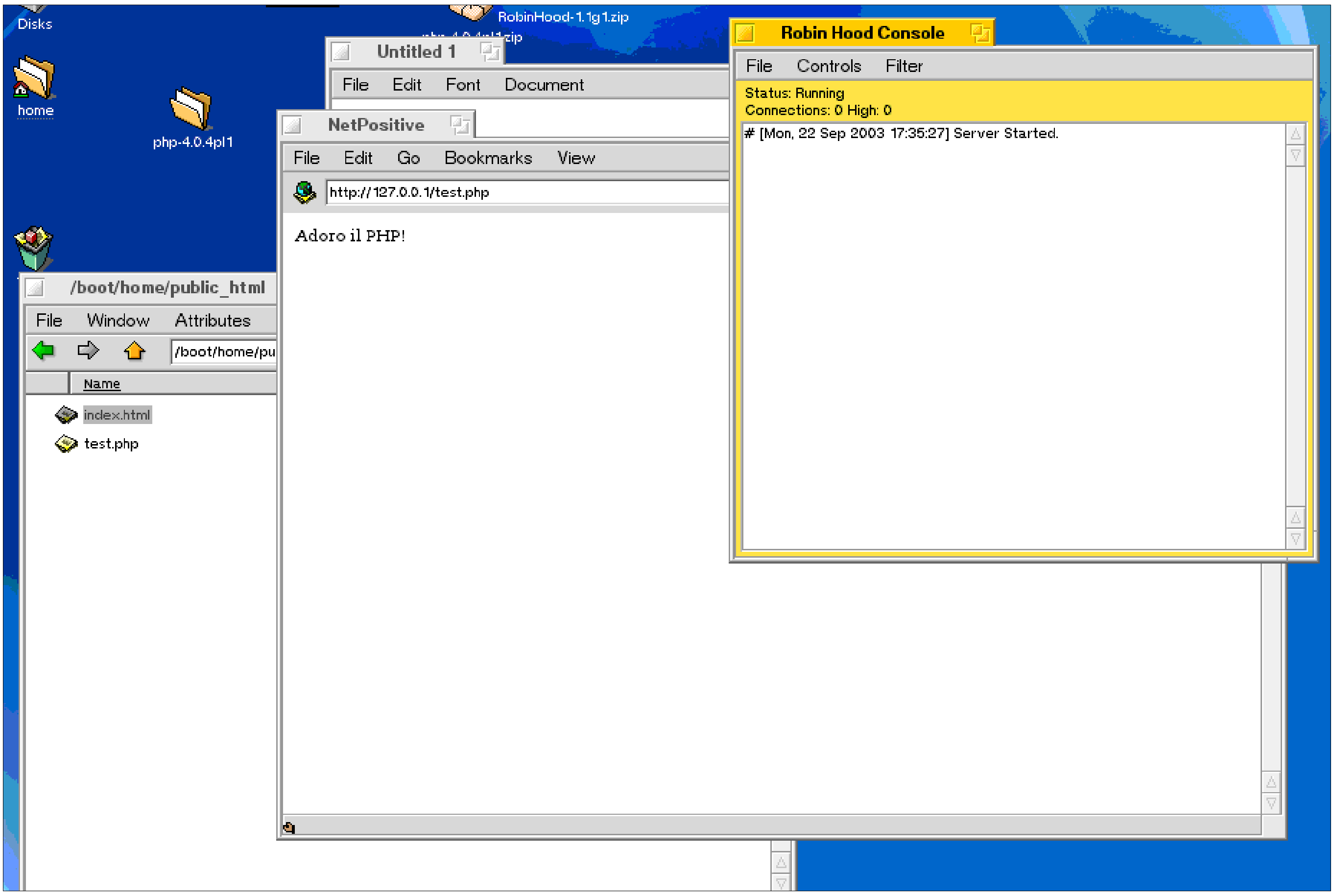
and save it as test.php in the public_html folder. Let's check again if this new file has the appropriate "Read" and "Execute" rights for the user "Other". Pay attention to the "Execute" parameter because its presence is necessary to allow the server processing it.

Let's open again the index.html file with StyleEdit to insert the following instructions before the </BODY> tag:

```
<br>
<a href="test.php">Click here to view PHP
in action!</a>
```

Save the modifications and return on the NetPositive window. Refreshing the index.html page's content, a new link appears. Just click on it and the PHP page will be loaded, showing "I love PHP!" message.

Do you love it then? In next articles we will examine better the PHP code and its advanced functionalities, such as Database access and text file processing. Stay tuned!



http://127.0.0.1/test.php

Adoro il PHP!

```
Status: Running
Connections: 0 High: 0
# [Mon, 22 Sep 2003 17:35:27] Server Started.
```

Robin Hood server console (above). The static page in the browser window (up)

The OSBOS

by Pier Luigi Fiorini [plfiorini@supereva.it]

A discussed family.
Let's meet them together

To many people the demise of Be, Inc. was an extremely negative news that left many thinking there were no hope left to have an alternative and really competitive operative system for multimedia and domestic needs. Luckily the BeOS community was able to re-organize itself after its preferred OS defeat and many projects arised trying to re-make what tehere were no more.
It is also born an international no-profit organization, BeUnited.org, whose purpose is the definition of standards for every adhering BeOS-like OSes.
In this article we will meet all the OSBOS projects (**Open Standards BeOS-compatible Operating System**).

BeFree

BeFree is a project born at first with the goal to develop the BeOS APIs on the BSD Operating System without the X Window Server.
After some months of development the situation evolved and we are now talking about a complete operative system for domestic users or for those who needs a multi-media platform.
Now the operative system is based on the Linux kernel and make use of GGI, a small library which usese some plugins to support various graphical systems (like the X Window Server, for example).
KGI is a project born to write drivers capable of using 3D acceleration, extending the classic console.
At this time FreeBSD 5.0/5.1 and linux 2.4 are supported.
What makes BeFree unique is the true integration with the Linux kernel, obtained adding functionalities to the kernel itself.
When BeFree 1.0 will be released users will have a complete desktop environment, based on Linux but without the heavy X Window graphic system.
BeFree is given with three licenses, GPL for the servers (as in the app_server) and the code written specificaly for Linux, LGPL for the kits and FDL for documentation.

BlueEyedOS

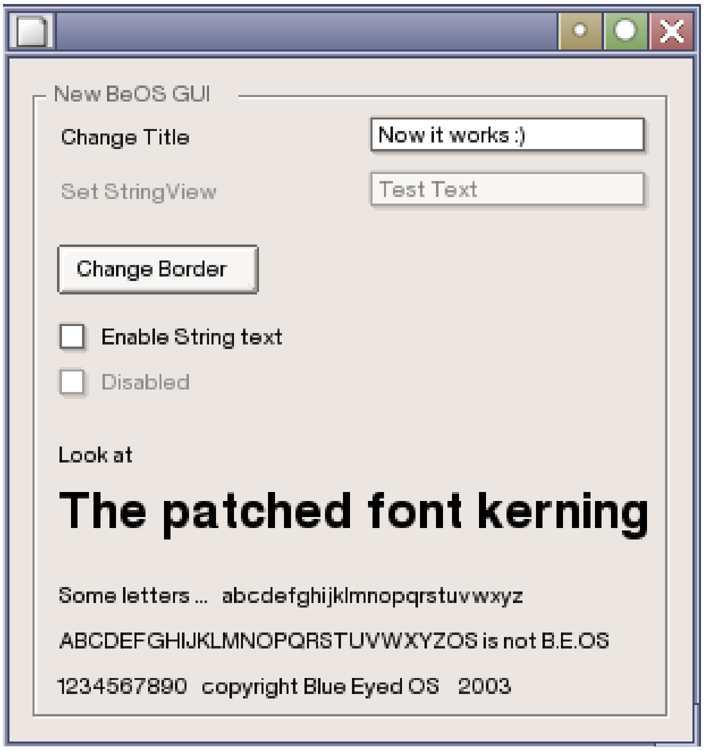
BlueEyedOS, or B.E.O.S. to the friends, is an implementation of the BeOS APIs and interface on Linux and the X Window System.
BeOS primitives are realized with a server that communicate with the Kernel Kit exchanging messages.
Some time ago was made available a modified version of Knoppix (a live-cd Linux distro) that used B.E.O.S. instead of KDE.
At this time the graphic interface is proprietary, but after the first version the code will be released under a particular Open Source license, though it will not be GPL.

Cosmoe

Cosmoe was born as a porting of the graphic interface of AtheOS, a Free operative system inspired by BeOS.
Actually, the SDL library was chosen to draw the graphic interface and Cosmoe APIs are now compèatible with those of BeOS.
At this time the project is under heavy development although having just reached a good stability.
The developers are working on a good implementation of the SDL support, and right now Cosmoe can run but showing problems in the drawing of the interface, due to his youth.
This project, along with BeFree, works on some modification at the Linux 2.6 so to allow in the future to integrate OpenBeFS in the Linux kernel.
Development is totally Free ubder the LGPL.

OpenBeOS

It is an operative system that set is goal to re-implement totally BeOS 5, and to extend it in



New BeOS GUI

Change Title: Now it works :)

Set StringView: Test Text

Change Border

□ Enable String text

□ Disabled

Look at

The patched font kerning

Some letters ... abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZOS is not B.E.OS

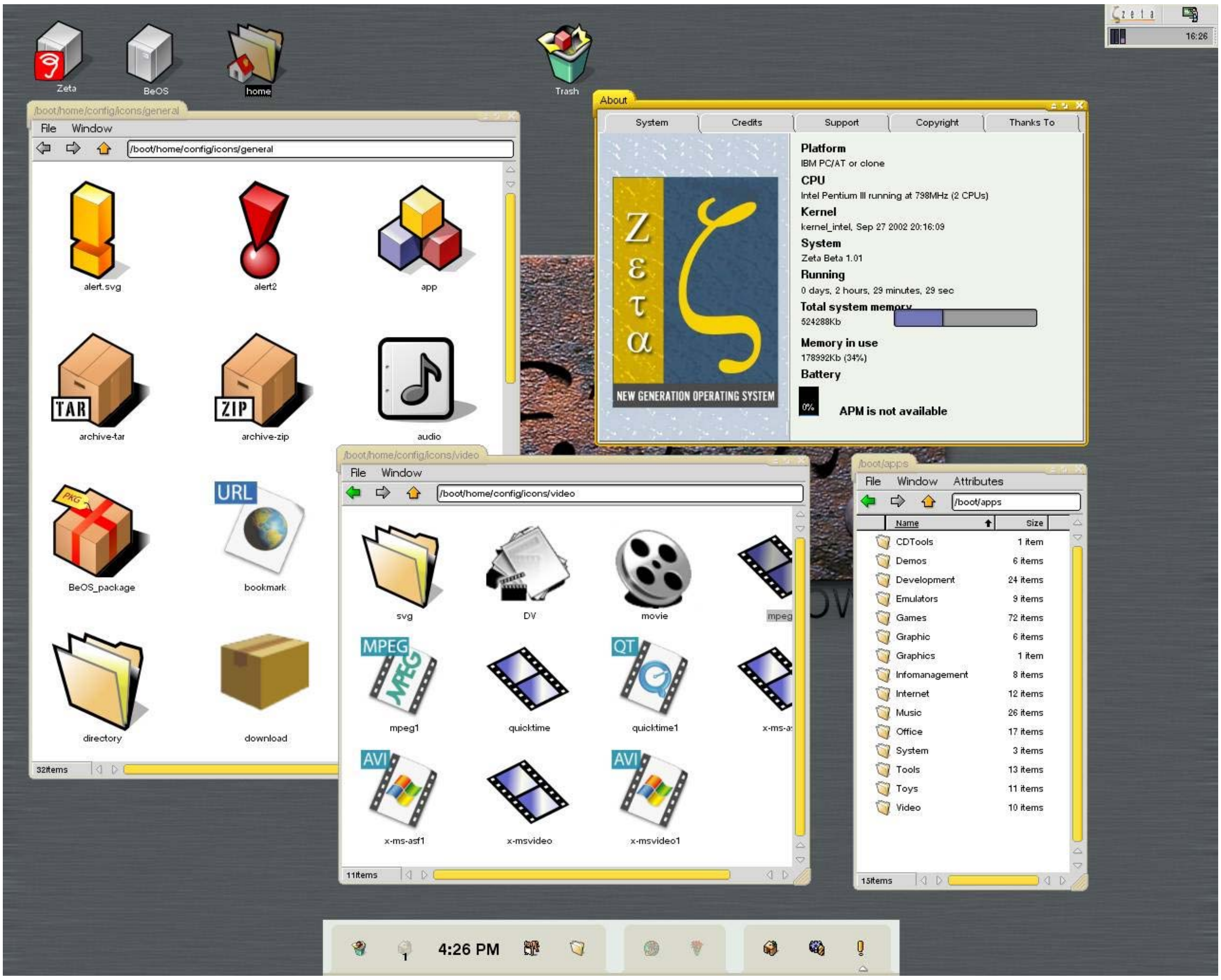
1234567890 copyright Blue Eyed OS 2003

OpenBeOS

the future.
Although it is a complete re-written of BeOS from scratch, were made some technical choices that are betttter than the originals, in cìfact the network stack is integrated into the kernel (in a similar way as BONE, the new stack that should have been adopted by Be, Inc. in BeOS 6), widening the POSIX compliance as well.
But alas, in my opinion, the kernel development proceeds very slowly, although Phipps (OpenBeOS author) seems confident.
To realize a new kernel, just ignoring the other similar projects that are developed by more time and have reached a good stability poses a great risk.
Kernel development is absolutely not trivial, not less the development of peripheric drivers, that are fundamental and their presence is essential in the succes of an operative system.
also this project is Open Source, to be more precise the source code is released under the MIT license.

Zeta

This discussed german operative system is should have been in origin the BeOS 5.1.
It is the only project realized by a commercial company and not by mere enthusiasts.
There are some new things more visible, such as a new and faster network stack (better known as BONE), the possibility to choose a theme also for applications and SVG support, a new vectorial graphic format.
Instead of the original Tracker we find a new file manager created by YellowTab (the company that produce Zeta) capable of supporting SVG and showing a preview of the images.
As a mail client it is chosen Beam, that gets away from the clean and simple filosofy of BeOS, because it has been preferred a graphical interface that's independent from the tracker, like in similar products for different platforms, over the integration with the system file manager.
YellowTab has recently announced the porting of WebCore, Apple's HTMl rendering engine (used in the Safari browser) that will let the company to develop its own browser.
When the first version wil come out, we will have different editions with many different software packages in bundle.



Platform
IBM PC/AT or clone
CPU
Intel Pentium III running at 798MHz (2 CPUs)
Kernel
kernel_intel, Sep 27 2002 20:16:09
System
Zeta Beta 1.01
Running
0 days, 2 hours, 29 minutes, 29 sec
Total system memory
524288Kb
Memory in use
178992Kb (34%)
Battery
0%
APM is not available

Name	Size
CDTools	1 item
Demos	6 items
Development	24 items
Emulators	9 items
Games	72 items
Graphic	6 items
Graphics	1 item
Infomanagement	8 items
Internet	12 items
Music	26 items
Office	17 items
System	3 items
Tools	13 items
Toys	11 items
Video	10 items

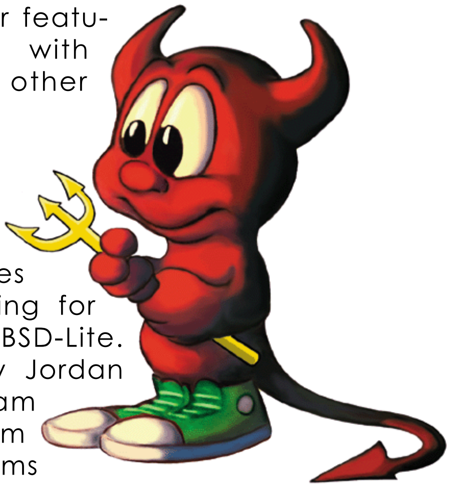
15items

Introducing the BSD family

by Matteo Riondato *[rionda@gufi.org]*

An overview upon the BSD system and its successors: FreeBSD, NetBSD, OpenBSD and Darwin

Who haven't ever heard of the Berkley University in California? Due to the creation of TCP/IP and the socket API, BIND or many other basic applications and protocols developed, UCB, as its usually called, has been for ages one of the most prestigious university all around the world about computer science and every discipline related to computers.
Many readers certainly have known that the laboratories of this university had developed a UNIX version since 1978, when it was inconceivable to "bring UNIX at home" and only the great academic structures could host and pay the hardware and the licenses of the OS developed at the Bell Labs of AT&T since 1969. Well, the BSD project started at Berkeley (Berkeley Software Distribution) aiming to develop an operating system compatible with AT&T's UNIX and available to everyone or better to all the universities and organizations that could host the VAX produced by DEC, where the OS was developed on. After the first version in 1978, the releases followed regularly one another throughout the 80's and BSD UNIX became the free alternative to UNIX System IV by AT&T. The releases that must be remembered are: 4.2BSD, with the first implementation of TCP/IP and the release 4.3 with BIND. Shortly after the release of 4.3BSD, on December '92, a legal debate arose between AT&T and UCB, because the colossus of the telecommunications charged the university with illegally copying parts of the source code of UNIX System V and incorporating and redistributing them in its BSD UNIX.
The lawsuit ended up in 1994 with the re-write of the incriminated portions of code by UCB, distributed in the release 4.4BSD-Lite2, that will be the last version of the system because of the closure of the project by the university.
Yet the story of BSD does not end here. In fact, even since 1993, due to the porting of BSD to the x86 platform, free alternative version of this UNIX began to be developed, the most spread is FreeBSD, released the first time in 1993. Beside of FreeBSD, also NetBSD (1993) and OpenBSD (1995) were born, under the free original BSD license and BSDi under a proprietary license. Other operating systems stick their roots in BSD: Darwin for example that is the base of Mac OSX by Apple.
In this article we will analyse three free BSD systems: Free, Net and OpenBSD. We will also see how to get and install them on our computers. We will put their features into comparison with Darwin, Linux and other systems.



FreeBSD

FreeBSD was born in 1993 and directly derives from 386BSD, the porting for i386 processors of 4.4BSD-Lite. Initially developed by Jordan Hubbard, Nate William and Rod Grimes, all from Berkeley University, it aims to maintain and develop the TCP/IP stack, that is the set of applications and functions that allows a machine to communicate with other systems, and to enhance the support for the x86 platform.
Its development engaged many developers soon, who felt attracted by the chance to bring a UNIX BSD at home. Nowadays, it still probably represents the second open source project for diffusion and number of developers. The latest release is 5.1 (but 4.9 is the stable one), it can be freely get, with source and many supporting applications, from the official ftp server at **ftp://ftp.freebsd.org/pub/FreeBSD**.
It's used on many servers around the Net (2 millions according to the latest polls), among them Yahoo!, Sony, Apache.org and Netcraft; however it's suitable for the great performances even as high level workstation and absolutely excellent as gateway.
At the moment x86, Alpha, Sparc64 and pc98 architectures are supported, while the porting for PPC, AMD64 and ia64 platform are in an advanced phase of development.
In order to always have an updated system, supported hardware and less security leaks, it was contemplated the chance to re-compile and personalize at will the base system and the kernel.
Yet, binary patches are available for those machines that can't be reboot frequently, because that would discontinue the services they offer, and for those who can't or just don't want to re-compile the entire system.
The package system of FreeBSD, the so called "ports system", allows a great flexibility in administer the applications that one wish to install, the related source code can be downloaded, even patched, compiled and installed with a simple command. The source com-

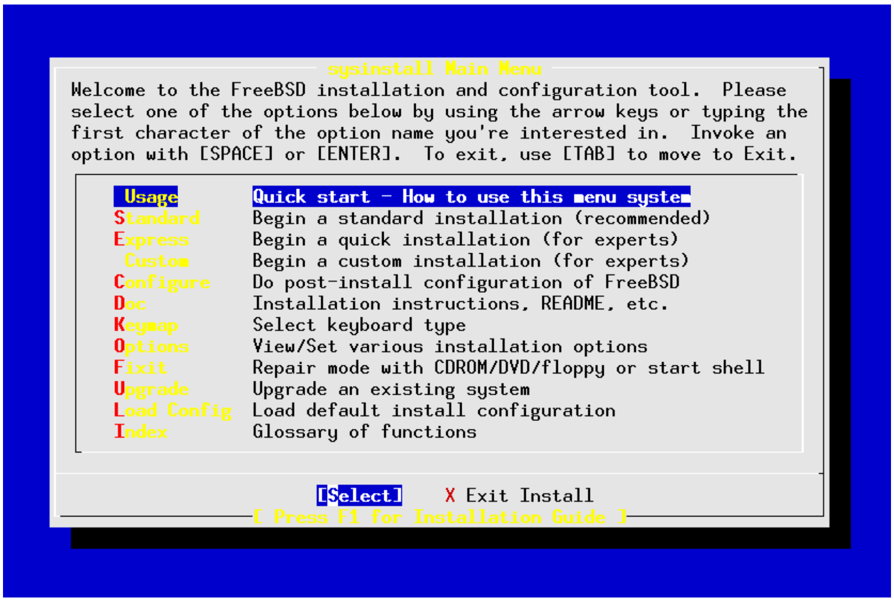
pilation allows to optimize and personalize according to your own taste and need, as long as you have a machine with an average performance and want to wait for compiling process to end, large packages like KDE, GNOME and OpenOffice need much time to compile. Who cannot wait or does not need any special code optimization, can take advantage from binary packages, existing for every application and manageable as easily as the ports.
Surely, the force of this OS is, in addition to the package managing system, the great stability (just consider that, according to the chart of the servers with the highest uptime drawn up by netcraft.com, in the first ten places we find 4 BSD systems, at least); this is due to the high security level from BSD UNIX and the experience of developers like Kirk McKusick, dean of the BSD developers, Sam Leffler (ex BSD), Scott Long, Luigi Rizzo and many others.
We remind you that FreeBSD is available in a live-cd version called FreeSBIE and a 16mb compact flash version called MiniBSD, downloadable both from **www.freesbie.org** and developed by a team mainly made up of Italians.

NetBSD

The objectives of this second system derived from BSD are more ambitious and the effort made by the developers to achieve this purpose is certainly praiseworthy. They set up to realize a system as standard as possible, so that it can be run on many different processors, thanks to the correctness of the code and an experimentation and research spirit. The list of supported platforms rewards the effort made by the developers of this OS, who have been able to port it on the most exotic platform like the consoles Sega Dreamcast and Sony PlayStation2, and the more or less common i386, VAX, PPC, Alpha, m68k, MIPS, ARM and others (the complete list is available at **http://www.netbsd.org/Ports**).
Another feature of this OS is the opportunity of execute applications written for different systems: the so called "compatibility layers" does exist for Linux, BSD/OS, Darwin, FreeBSD, HP-UX, IRIX, OSF1/Digital UNIX/Tru64 UNIX, Solaris and ULTRIX binaries.
Because of this, NetBSD could be used in a firm migrating from an OS to another one and can't re-write some applications.
NetBSD has a package managing system, too. It is devided in two subsystem, so it is possible to install an application both from the downloaded source code, once compiled and installed, and from a pre-compiled binary package. Obviously the dependency management procedure is fully automatic.
The high standard conformance pursued by the developers, makes this OS the optimum those who want to approach the UNIX world, because it supplies a platform without flippery or automated tools that complicate the administration of the system rather than simplify it.

OpenBSD

The third BSD-based system that we analyse in this artiche, derives from NetBSD, so shares with it the first part of its history. In 1995, the Canadian developer Theo de Raadt left NetBSD project mainly due to philosophical reasons about the licenses and attritions with other developers; he decided to carry forward a project aiming the maximum security level, as expressed by the watchword "Secure by Default". Actually during seven years of development only one security bug has been found in the basic installation of this system. This is a date to consider with caution, because only few applications are present and/or active in the default installation. Suitable for a gateway and firewall environment, thanks to the packet filter PF, it includes a set of solutions useful to protect a local network and the system itself. PF is the evolution of IPF by Darren Reed and compines an extremely intuitive syntax with stunning performance, although the relative "youth" of this packet filter.
The perseverant OpenBSD developers, take



```
                      sysinstall Main Menu
Welcome to the FreeBSD installation and configuration tool.  Please
select one of the options below by using the arrow keys or typing the
first character of the option name you're interested in.  Invoke an
option with [SPACE] or [ENTER].  To exit, use [TAB] to move to Exit.

     Usage         Quick start - How to use this menu system
     Standard      Begin a standard installation (recommended)
     Express       Begin a quick installation (for experts)
      Custom       Begin a custom installation (for experts)
     Configure     Do post-install configuration of FreeBSD
     Doc           Installation instructions, README, etc.
     Keymap        Select keyboard type
     Options       View/Set various installation options
     Fixit         Repair mode with CDROM/DVD/floppy or start shell
     Upgrade       Upgrade an existing system
     Load Config   Load default install configuration
     Index         Glossary of functions

                    [Select]      X Exit Install
               [ Press F1 for Installation Guide ]
```

also care of the development of OpenSSH, the free implementation of the cryptography SSH protocol. For those who want to execute a firewall, a gateway or a transparent proxy for their LAN, OpenBSD is a solution to keep in great consideration.

Darwin

Apple has been always innovative, as enounced by its slogan "Think Different", and in 2001 released MacOSX 10.1, an operating system for desktops, workstations and servers that relies on a base derived from BSD therefore UNIX: Darwin.
This system, available as a standalone OS too, is a real BSD: it uses UFS, the BSD default filesystem, its TCP/IP stack is directly taken from FreeBSD, its tools and applications come from NetBSD and includes OpenSSH, contributed by OpenBBSD.
Darwin runs on PowerPC machines but Apple has ported it to the x86 platform, even though not all motherboards are supported. It has not a package managing system, in its official the release at least, but projects like OpenDarwin (**www.opendarwin.org**), sponsored by Apple, ISC (Internet Society), and Fink (**fink.sf.net**) exist. They represent the equivalent system of the ports of FreeBSD and the apt-get of Debian, respectively.
In comparison with other BSD, this OS includes functions not usually present in other UNIXes, i.e. the users management and the directory tree structure, yet it's an excellent example of how BSD systems are still alive after 30 years since their first release and how it is possible to put them on the base of a mainly graphical OS like Mac OS X.

Conclusions

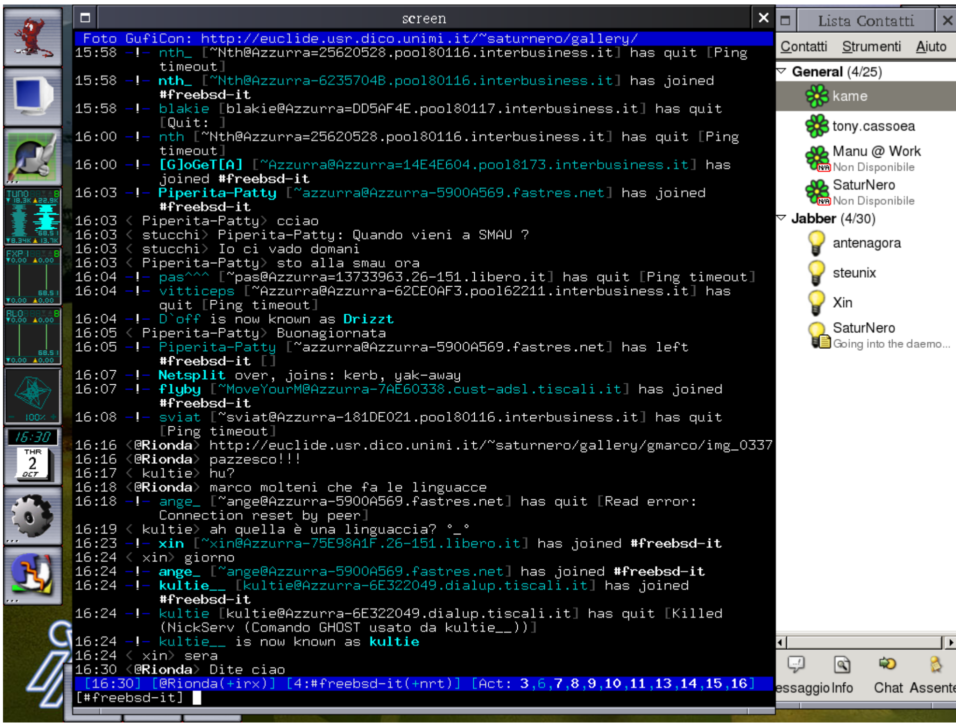
BSD operating systems are a valid alternative for sure, expecially for the "high-end users", like big companies that need stable and high performance servers. Even home users who want to administrate a UNIX system will be able to use it successfully, as long as they haven't got latest generation hardware, because their support could not be granted by the developers.
Who need a minimum of orderliness in comparison with the confusion of Linux distributions, will surely find the traditional UNIX spirit in these systems.

Official Sites

FreeBSD **http://www.freebsd.org**
NetBSD **http://www.netbsd.org**
OpenBSD **http://openbsd.org**

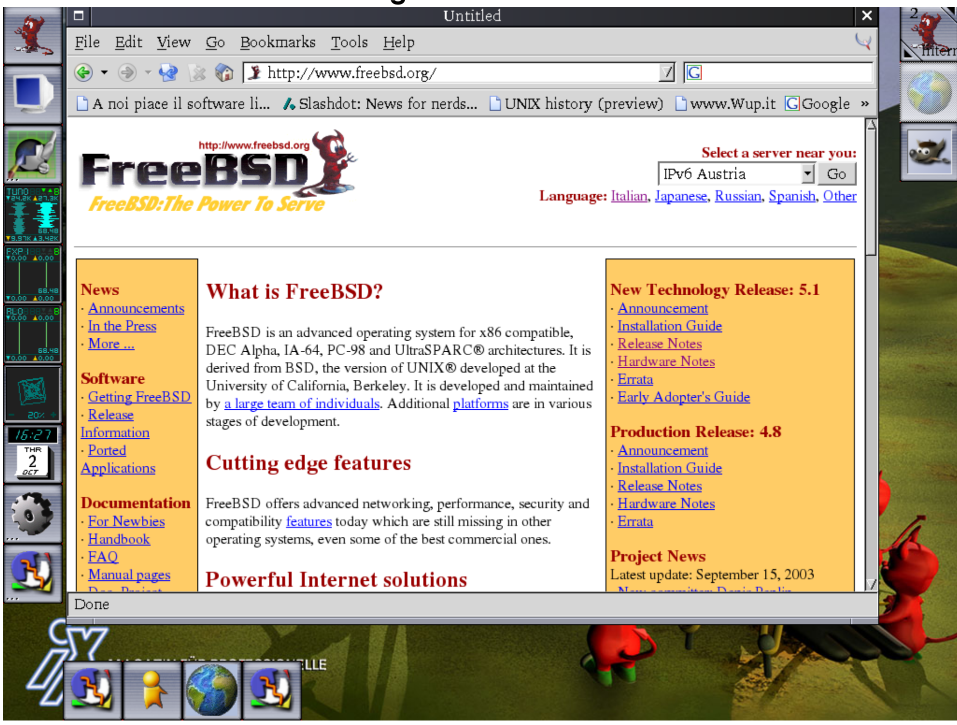
Italian Users Groups

Gruppo Utenti FreeBSD Italia (GUFI) **http://www.gufi.org**
Beer OpenBSD User Group **http://www.openbeer.it**



```
 Foto GufiCon: http://euclide.usr.dico.unimi.it/~saturnero/gallery/
15:58 -!- nth_ [~Nth@Azzurra=25620528.pool80116.interbusiness.it] has quit [Ping
          timeout]
15:58 -!- nth_ [~Nth@Azzurra-6235704B.pool80116.interbusiness.it] has joined
          #freebsd-it
15:58 -!- blakie [blakie@Azzurra=DD5AF4E.pool80117.interbusiness.it] has quit
          [Quit: ]
16:00 -!- nth [~Nth@Azzurra=25620528.pool80116.interbusiness.it] has quit [Ping
          timeout]
16:00 -!- [G]oGeT[A] [~Azzurra@Azzurra=14E4E604.pool8173.interbusiness.it] has
          joined #freebsd-it
16:03 -!- Piperita-Patty [~azzurra@Azzurra-5900A569.fastres.net] has joined
          #freebsd-it
16:03 < Piperita-Patty> cciao
16:03 < stucchi> Piperita-Patty: Quando vieni a SMAU ?
16:03 < stucchi> Io ci vado domani
16:03 < Piperita-Patty> sto alla smau ora
16:04 -!- pas^^^ [~pas@Azzurra=13733963.26-151.libero.it] has quit [Ping timeout]
16:04 -!- vitticeps [~Azzurra@Azzurra-62CE0AF3.pool62211.interbusiness.it] has
          quit [Ping timeout]
16:04 -!- D`off is now known as Drizzt
16:05 < Piperita-Patty> Buonagiornata
16:05 -!- Piperita-Patty [~azzurra@Azzurra-5900A569.fastres.net] has left
          #freebsd-it []
16:07 -!- Netsplit over, joins: kerb, yak-away
16:07 -!- flyby [~MoveYourM@Azzurra-7AE60338.cust-adsl.tiscali.it] has joined
          #freebsd-it
16:08 -!- sviat [~sviat@Azzurra-181DE021.pool80116.interbusiness.it] has quit
          [Ping timeout]
16:16 <@Rionda> http://euclide.usr.dico.unimi.it/~saturnero/gallery/gmarco/img_0337
16:16 <@Rionda> pazzesco!!!
16:17 < kultie> hu?
16:18 <@Rionda> marco molteni che fa le linguacce
16:18 -!- ange_ [~ange@Azzurra-5900A569.fastres.net] has quit [Read error:
          Connection reset by peer]
16:19 < kultie> ah quella è una linguaccia? °_°
16:23 -!- xin [~xin@Azzurra-75E98A1F.26-151.libero.it] has joined #freebsd-it
16:24 < xin> giorno
16:24 -!- ange_ [~ange@Azzurra-5900A569.fastres.net] has joined #freebsd-it
16:24 -!- kultie__ [kultie@Azzurra-6E322049.dialup.tiscali.it] has joined
          #freebsd-it
16:24 -!- kultie [kultie@Azzurra-6E322049.dialup.tiscali.it] has quit [Killed
          (NickServ (Comando GHOST usato da kultie__))]
16:24 -!- kultie__ is now known as kultie
16:24 < xin> sera
16:30 <@Rionda> Dite ciao
 [16:30] [@Rionda(+irx)] [4:#freebsd-it(+nrt)] [Act: 3,6,7,8,9,10,11,13,14,15,16]
[#freebsd-it] 
```

Some screenshots of BSD systems in action. On front page the configuration and installation screen of FreeBSD


Untitled
File Edit View Go Bookmarks Tools Help
http://www.freebsd.org/
A noi piace il software li... Slashdot: News for nerds... UNIX history (preview) www.Wup.it Google »
http://www.freebsd.org
FreeBSD
FreeBSD:The Power To Serve
Select a server near you:
IPv6 Austria
Go
Language: Italian, Japanese, Russian, Spanish, Other
Done
THR 2 OCT
16:27

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· In the Press
· More ...

Software
· Getting FreeBSD
· Release Information
· Ported Applications

Documentation
· For Newbies
· Handbook
· FAQ
· Manual pages

What is FreeBSD?

FreeBSD is an advanced operating system for x86 compatible, DEC Alpha, IA-64, PC-98 and UltraSPARC® architectures. It is derived from BSD, the version of UNIX® developed at the University of California, Berkeley. It is developed and maintained by a large team of individuals. Additional platforms are in various stages of development.

Cutting edge features

FreeBSD offers advanced networking, performance, security and compatibility features today which are still missing in other operating systems, even some of the best commercial ones.

Powerful Internet solutions

New Technology Release: 5.1
· Announcement
· Installation Guide
· Release Notes
· Hardware Notes
· Errata
· Early Adopter's Guide

Production Release: 4.8
· Announcement
· Installation Guide
· Release Notes
· Hardware Notes
· Errata

Project News
Latest update: September 15, 2003

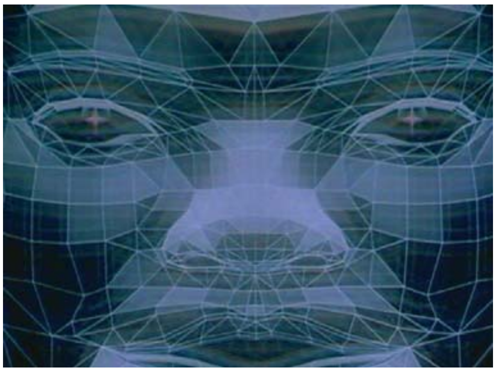
A World of thousand of bits

by Gabriele Baldassarre

An interesting deepening about the story of computer animation and the technics, hardware and software used to realized one of the pioneer of the genre: "TRON"

While timid home computers have just begun to show some colored pixels and powerful mainframes were used exclusively in scientific and military researches, a few courageous and visionary movie-makers begun to think about using informatics to fill movie theaters.

With this article, I hope to succed in digging in all the technical facets that contributed to this task, speaking of the making of the first movie animated in computer graphics in all movie history.



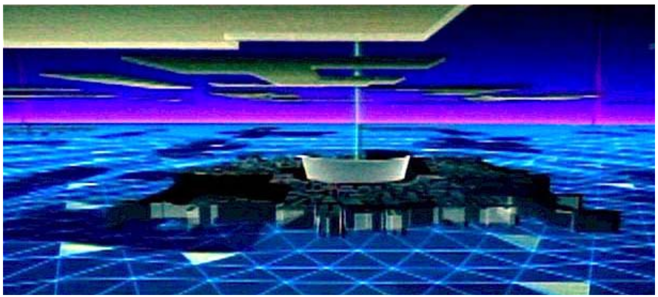
Computer graphics, or CG for shorts, it's not a new thing, being used from the second half of the '60 for CAD projects financed by the U.S. Government.

It's not difficult to notice that also in this case, the use of these technologies were limited to the sole scientific and military environment, with purposes very far from the entertainement field, at least until the costs (prohibitives) of the hardware would discourage the private enterprise.

The first movie that used CG massively was "Tron" by Steven Lisberger (WestWorld in 1973 and Star Wars in 1977 preceded Tron, to tell the truth, but the use was not so intense), a movie not only shot with the aid of the calculator, but the story verted in the inside of it, in a truly "virtual world", with its phisics rules and in which the programs, the users alter-ego, lived, fought, fell in love and felt emotions just like the real "users".

An innovative movie full of innovation, not only for the special effects and the shooting tecniques, but also for the themes of the story. Not considering the traditional tecniques, however interesting (the saturation gels and the lights used to give the electronic luminescence that characterized the whole "virtual world"), we will consider here only the scenes that used massively the computer instead of the camera.

There were four companies that worked on this project: Information international Inc. (better known as Triple-I), MAGI Synthavision, Robert Abel & Associates and Digital Effects, but principally the two first were the main characters of the show.



MAGI, Mathematical Application Group Inc. by Phil Mittlemann, was the creator of the ray-tracing tecnique, that is to say the tridimensional visualization tecnique by which 3D objects are rendered by emitting lightrays.

It was a natural consequence of their radiation detection system, commissioned by the government during the Cold War, in which it was enough to substitute the radioactive particles with lightrays.

And it was MAGI, through her subsidiary Synthavision (named after the software used for this purpose), who produced the first commercial CG in history, when on the monitor in an office in Elmsford, N.Y., appeared the letters of the word IBM rotating and making themselves noticed .

MAGI/Synthavision created one of the two modeling system used today: procedural modeling, were objects are obtained by the combination, sometimes very complex, of elementary geometric forms.

We can appreciate this kind of work in TRON, especially in the famous race in the "moto-labyrinth", among the other scenes.

The brand was later sold to a Canadian company, and the people who worked there scattered to firms and universities in the whole North America.

Triple-I had followed a completely different approach.

Specialized from 1962 in scanner and acquisition peripherals, they had implemented a software, TRANEW, built for they work machine, the Foonley F1. This computer was a powered-up version of a PDP-10, 36 bit and 10 mhz clock cycle per 6 MIPS with 1 mb of total memory, but it was never truly finished, due to lack of funds, and to be used it needed a permanent connection with a DEC KL-10.

At first it was used as an OCR, bat at Triple-I they had greater projects.

In respect to MAGI, they had a less rigorous mathematical method, but surely more efficient and it let them model much more com-

plex objects. Instead of using a composition of elementar 3 D objects, at International Information they had files on disk (HUGE disks, as you can imagine) which defined vertex and polygons, but also textures, light sources, cameras, shadows, bumps and so on.

TRANEW, written in FORTRAN and Assembler, elaborated raw data in the form of hash tables distinct in the three components red, green and blue, to visualize the result at 6 bit per pixel on a 1024x1024 screen or, with a specific unit connected, to directly impress the film.

the movie team and the Triple-I technicians could see only a frame at a time, and, only with the aid of the story-board alone, they had to imagine the scene in motion.

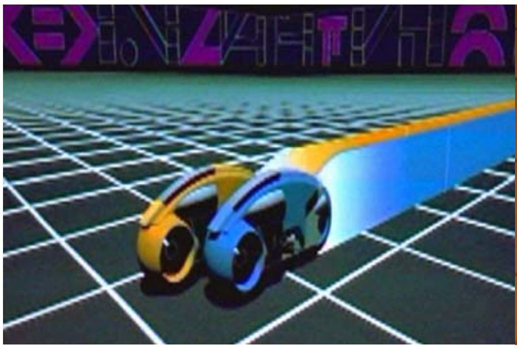
The scene were realized by calculating each position and rotation on the axis x,y,z for each single object and each single frame to obtain, frame by frame, the desired movement.

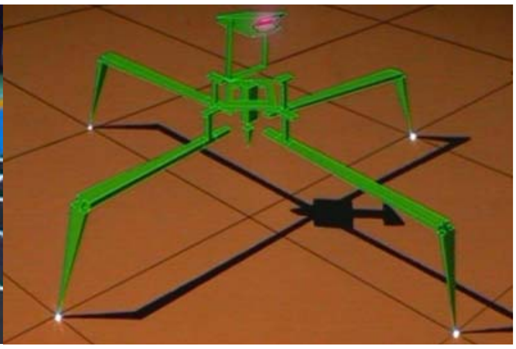
There was a dedicated application to aid the computational calculation, but this immense number of coordinates and rotational degrees had to be annotated by hand and inserted in TRANEW, and only in the shooting theater and after the scene were completely rendered (with a 10 minutes per frame rendering media) it could be possible to visualize everything, impressed on a 70mm film.

3D objets were acquired by specialized scanning tables, with optical pens, and then elaborated and adjusted by hand where necessary with a specific software.

The work at Tiple-I was truly hard and it's really incredible how tehy were able to create very particular objects (just like the solar-sail and the Adam Power the Juggler demo, used as a promo), sophisticated graphical effects and funambolic movements... a work with the highest standard, also compared to today standards.

Triple-I was dismembered when TRON was not yet finished, so that part of the contract passed to MAGI, because the financial and technical assets of the company were enough to permit its founders, John Whitney and Gary Demos to create Digital Illustration.





The primary engineer of their machine, advanced but unfinished, Dave Poole was declared lst at sea after a tempest, and is machine was not used anymore, because Digital Illustration used a modern Cray instead. Other "pseudo-digital" techniques used in TRON considered that a computer generated vector would be filmed, and that on this would be added filters and layers on the camera itself, so to generate luminous effects, when there were no computers so powerful to do it themselves.

That was the case of the initial flyby in the virtual world, and th results were spectacular, to say the less.

Again, an animation technique, this time completely geometric, was used to create "The BIT" (Digital Effects).

It's easy to understand how not only the digital technicians were able to make this great job, but how the team that did the film editing were able to merge all of these techniques, avoiding any conflict between them.

Lisberger and his staff had been succesful in making those scenes rich in drama and theatrality, even if today they may appear cold and "plastic-like".

But the relationship is symbiotic, and the director had had the opportunity to explore the potential of a medium that nobody before him had thought to explore in this field.

With CG the movie field loose all the flatness of bi-dimensional creations, made of drawed or painted backgrounds, using only the x,y axes, and gains perspective: with a few numerical changes it is possible to move he camera, light sources, modify the perspective and completely change the rules.

I don't know if in this field is more exciting to look behind, at the past, or to look ahead, at the future; stopping a while considering the pioneristic spirit of deeds done, or hypotize about the ones that
wil be achieved.

One thing is for sure, all begun with this innovative Disney movie, and with its having used together all this techniques that are today implemented in movies, videogames and computers, but that back then were only work, passion and belief in technology.

And that's only the beginning!

Linux distributions

by Pier Luigi Fiorini *[plfiorini@supereva.it]*

A dissertation upon Linux "distros". Which are, how to get, how to install them.

One of the major things against the adoption of Linux by new users is the presence of too many distributions.

To choose the one more useful for one's needs could be very difficult without a good knowledge of what's available.

In this article I'll spread some light on the pros and cons of the most known distros of the penguin.

debian

It is a distro completely realised by enthusiast with no-profit ntents.

It is famous for the great amount of software available, because it is very difficult to install and for the the greatest number of hardware platforms supported.

To be used at its best it requires knowlege greater than that of a newbie.

Installation and configuration is done comppletely without of a graphic interface.

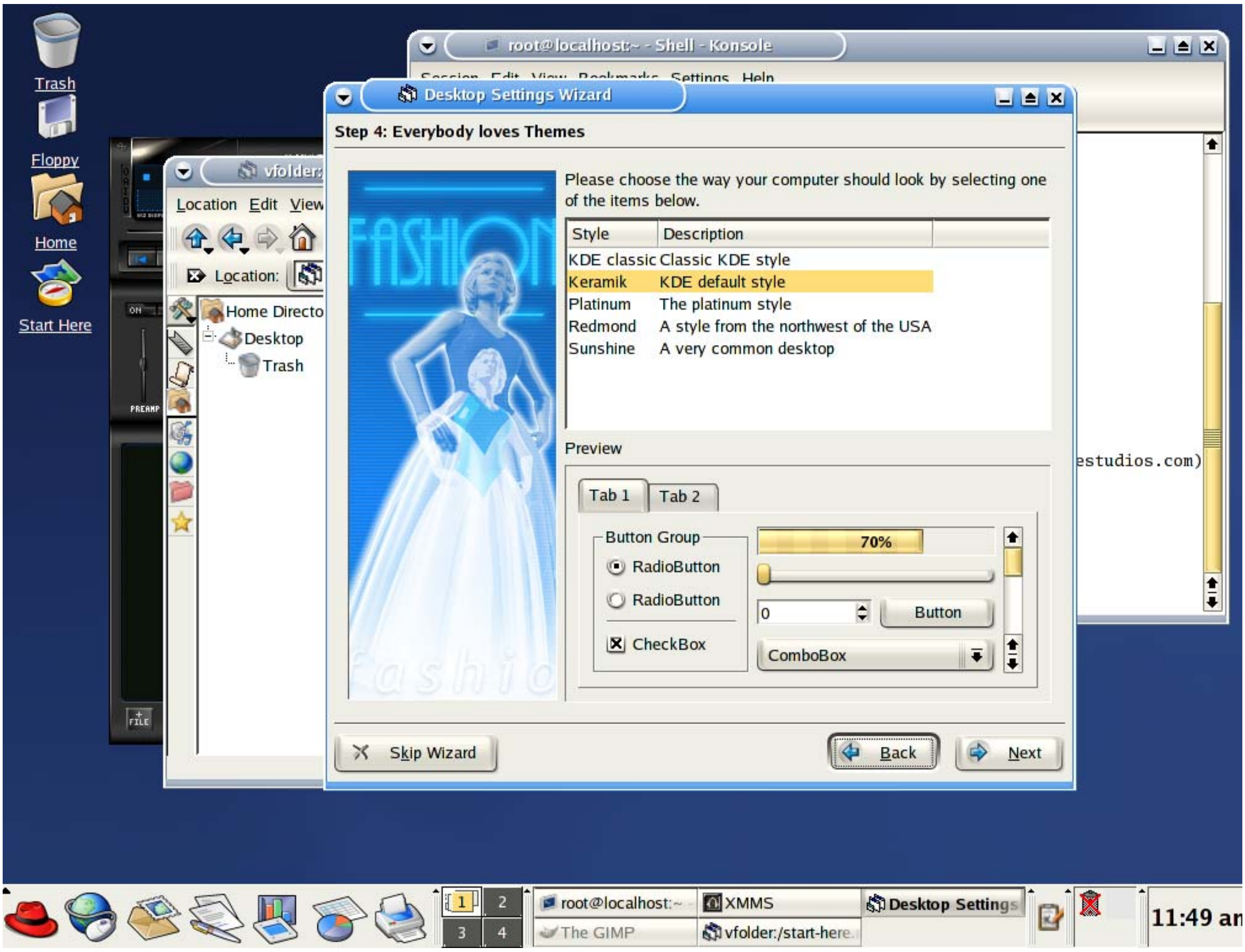
The development of the various packages is done in Debian SID (the unstable branch); when the software become more stable goes in Debian testing (called Sarge when this article is written).

When the testing is sufficiently stable it becomes a stable version (the latest stable version is the 3.0, called Woody).

Debian is a good distro of Linux because of the presence of apt-get, used to install and upgrade the software packages, and debconf, the configuration system that asks some good questions about the settings of the software that one is installing.

It's a pity that this level of control on one's box could be a problem for the newbie.

The lack of updted software in the stable version pushes the user to ue SID, that is always under development.



Step 4: Everybody loves Themes

Please choose the way your computer should look by selecting one of the items below.

Style	Description
KDE classic	Classic KDE style
Keramik	KDE default style
Platinum	The platinum style
Redmond	A style from the northwest of the USA
Sunshine	A very common desktop

slackware linux

This is a distro that created about ten years ago, developed and mantained by Patrick J. Volkerding. It is known for for its simple, clean style, inspired by BSD.

It is an operative system that at every release choose for the user softare updated to the latest stable version available, without sacrificing reliability.

Its packages are gzipped tar archives without control over dependancies, simpler than those of other distros.

Configuration and installation are done using tools with a semi-graphic interface.

It is required a good level of experience to usefully use this distro; one iften doesn't find pre-compiled packages so it becomes necessary to compile the software one needs.

redhat

Perhaps the most known distro among those in this article.

It could be installed both textually and graphically, and the graphic environment chosen is Gnome.

The great abundance of third-party software is a point in favour of the distro.

The poor stability of some core components makes it risky to use it in a server environment, I recommend it for home users or for the office.

worth mentioning is the fact that from the same company is born a project oriented to cooperate with the community, called Fedora, Debian style.

Fedora is subdivided in different projects mantained by Red Hat workers though external contribute it is accepted.

SuSE

German distro that is gaining popularity, thank also to IBM. Also for SuSE are available two installation modes, one textual and the other graphical.

The latest version is 8.2, and recently over the web there are rumors about the next version, 9.2.

The desktop environment is KDE, yet GNOME and the classic window managers like Window Maker are available.

Installing and using SuSE it is clear that one is in front of an interesting environment, both desktop and server side.

Just like on Red Hat OpenOffice.Org is available, and the updating of X Window, Gnome and KDE to the latest stable versions, makes SuSE a very good platform for the home and SOHO user.

Installation, configuration and upgrading are done with Yast, a graphic and semi-graphic tool.

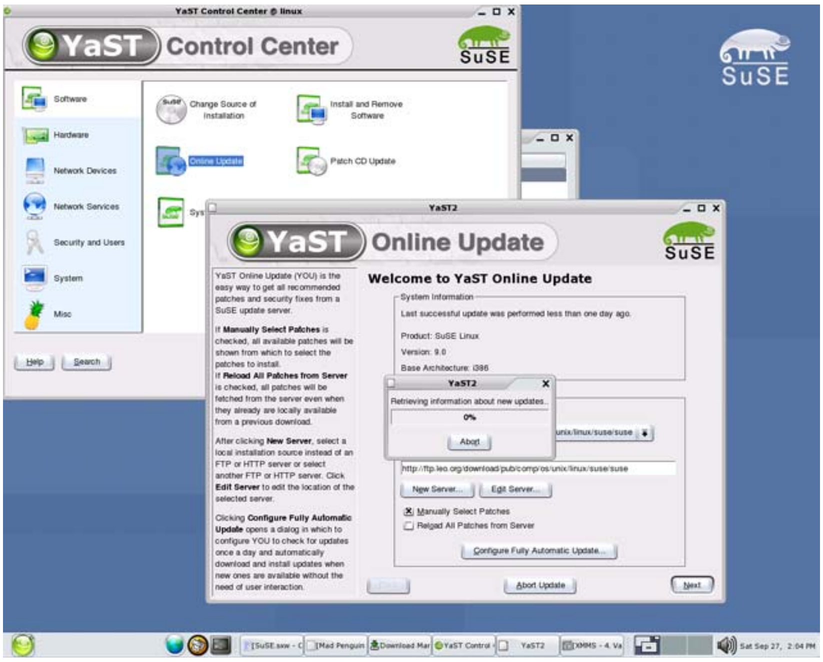
Yast duplicity and the possibility to install a system without compilers and graphical interfaces makes the distro a good choice also in a server environment.

In my opinion, this is the only distro around that is fit for every need, with no great disadvantages for any user.

Mandrake Linux

A French distro, based originally upon Red Hat to have an O.S. completely optimized for Pentium (or greater).

It is given with graphical tools for an almost automatic configuration of the computer, ideal for home users. It is not the max for reliability and stability, so I wouldn't recommend it for worksations or server installations.



YaST Online Update (YOU) is the easy way to get all recommended patches and security fixes from a SuSE update server.

If **Manually Select Patches** is checked, all available patches will be shown from which to select the patches to install.
If **Reload All Patches from Server** is checked, all patches will be fetched from the server even when they already are locally available from a previous download.

After clicking **New Server**, select a local installation source instead of an FTP or HTTP server or select another FTP or HTTP server. Click **Edit Server** to edit the location of the selected server.

Clicking **Configure Fully Automatic Update** opens a dialog in which to configure YOU to check for updates once a day and automatically download and install updates when new ones are available without the need of user interaction.

Welcome to YaST Online Update

System Information

Last successful update was performed less than one day ago.

Product: SuSE Linux

Version: 9.0

Base Architecture: i386

Retrieving information about new updates...

0%

http://ftp.leo.org/download/pub/comp/os/unix/linux/suse/suse

☒ Manually Select Patches
☐ Reload All Patches from Server

In the photo aside a screenshot of the SuSE distribution. On front page Red Hat in action.

PIANETA AMIGA 2003

di Giuseppe Gargaro *[giuseppe.gargaro@tiscali.it]*

Pianeta Amiga is one of the most important international Amiga show. And now it opens the doors to the alternative systems

On September 20th and 21th the seventh edition of Pianeta Amiga took place in the historical setting of the Pala Esposizioni in Empoli. PA is an annual date dedicated to Amiga and alternative platforms fans. This edition was very interesting and rich of surprises due to both the quantity of exhibitors and new products presented.

Here's an overview of the exhibitors and their stands:

Virtual Works

The famous italian distributor of Amiga, Mac and PC products is one of the organizers of the show and is present every year. It was possible to test and buy an AmigaOne with GNU/Linux Debian at their stand, one of the largest of the show. Furthermore they showed a great deal of software and hardware stuff for Amiga.

Soft3

The greatest attraction of PA was the stand of Soft3 where it was possible to see and try AmigaOS 4.0 running on an AmigaOne G4 933Mhz for the first time; obviously the version showed was incomplete and its performance wasn't at its best. A Commodore-One motherboard could be admired, too. The Commodore-One, is the new hardware compatible with the mythical C-64.

Genesi *with Elena Novaretti and Michele Magliocca*

One of the main attraction poles of Pianeta Amiga was the PPC platform Pegasos with the new operating system MorphOS 1.4, really faster and more stable than ever. By the stand a few workstation were available to test the system with the support of Elena and Michele, assisted by Sebastian and Bertrand of Genesi. The beautiful fractals created by Elena with her famous application Zone Explorer, were displayed in the stand. Pegasos
catalyzed the attention of BeOS users considering that during BeGeistert 11 OpenBeOS will boot on a Pegasos PPC platform.

Morrigan Development

"Morrigan Development" was present at the show. This young firm works in the planning and multimedia field (advertising, graphic, professional quality photography, video and musical productions).

Darkage

This softwarehouse covered a new market sector dedicated to web design and communications;
by their stand it was possible to acquire the products relized by Darkage. Among them Supreme for AmigaOS, a software capable of generating realtime spectacular digital video effects.

Point Design

The famous austrian Amiga reseller Jürgen Schober "Point Design" was the organizer of "AmigaOS 4 on Tour".
Amiga OS4 and MacOnLinux on AmigaOne could be admired by his expositive room. They sold ATI Radeon video card and software for Amiga and Linux.

Bitplane

The only italian magazine for Amiga was present with its editor-in-chief Nicola Morocutti and the coordinator Claudio Marra Filosa. They presented the issue number 8 including a special article dedicated to BeOS; It was possible to buy old numbers and to subscribe to the magazine.

ItBug

The Italian BeOS User Group joined in the show for the second consecutive year; Christian Celona and Giuseppe Gargaro were present for Itbug. On saturday 5.00 PM, they held a presentation of Zeta Beta 6. The presentation started with a brief history of the operating system followed by an analysis of its peculiarities: Preemptive multitasking, multiprocessor support, protected memory and Journaling.
Zeta was presented paying attention to the new features compared with BeOS 5. During the presentation they introduced Beyond to the public, your favourite magazine.
At the end of the presentation the entrants made their questions and even if they were not a moltitude, they were very interested in trying Zeta.

The presentation of AmigaOS4 held by Stefano Guidetti, Massimiliano Tretene and Jurger Schober was greatly followed; AmigaOS run on an AmigaOne Tower by Soft3 for the first time ever. In spite of the limits of that version, the lack of filesystem and the support for second level cache and with (many modules that were not recomiled for PPC) the potentiality of this OS were manifest.
In the end we have to express admiration for the organizers who have been supporting this show for years. This show is becoming an event that aims to involve other alternative platform like: Mac, Linux and BeOS.

LINKS

http://www.pianetaamiga.it/
http://www.amiga.com/
http://www.genesi.lu/
http://www.itbug.org/
http://www.elena-fractals.it/
http://www.soft3.net/
http://www.virtualworks.it/

In the photo aside Giuseppe Gargaro and Christian Celona during the presentation of Zeta. On front page a moment of the show.

MAGAZINE BEYOND

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